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FOOD-STUFFS IN THE TIME OF WAR.

By Mr. ALFRED MANSELL.

Wednesday, 18th November, 1903.

The Right Hon. the LORD STRATHCONA AND MOUNT ROYAL, G.C.M.G.,
High Commissioner for the Dominion of Canada, in the Chair.

MY original object in reading a short paper on this subject was to call the attention of agriculturists to this vital question, with a view of that important section of the community bestirring themselves to put reliable facts and figures prominently before the public, which could not be otherwise than instructive to the Royal Commission appointed to enquire and report on the same.

Upon the present occasion the paper I have prepared is to be read at an Institution composed almost entirely of soldiers and sailors, and though the duty of considering the food supply of the nation may not be included in the ordinary routine of the officers of our Army and Navy, still it is one that every member of these professions from time to time must think of with considerable interest. That it is one that demands the attention of all sections of the community cannot be doubted, and it is hoped that by bringing it before this Institution the members may be disposed to debate and discuss it, and thereby bring out points, from a Service point of view, which might escape a civilian mind, and so greatly assist in the solution of this difficult subject.

More recently published statistics, including the Board of Trade Returns on the Enquiry into the Fiscal question, have shown that the country becomes year by year more increasingly dependent on other lands for our food stuffs and the raw materials needed for our manufactures.

The Commission, if it goes fully and intelligently into the question, may throw fresh light on a very difficult problem, and may be the means of not only encouraging, but securing, a larger growth of food stuffs at home, and thus put the nation into a better state of preparedness in case of an outbreak of hostilities.

It is hoped that the discussion which follows the reading of this paper may prove of some assistance to the Royal Commission in their deliberations. It has been said, and will bear repetition, that the surest method of keeping peace is to be fully prepared for war.

In approaching this question most speakers deal only with the bread-stuffs necessary to support our teeming millions; but an analysis of our imports will, I think, show that the other commodities of life and the raw material required by the country should also be safeguarded to the fullest extent. It would, in my opinion, be futile to be assured of a sufficient supply of food in the country if the working classes were deprived of the raw materials for our manufactures which would ensure their constant employment. I do not intend to weary you with statistics, but at the outset I am compelled to put some figures forward to prove our present position and our great dependence on other countries for the absolute necessities of life, showing the quantity of food imported into the United Kingdom, and the figures for a period of 32 years.

The figures in hundredweights for last year may be compared with profit with those for 1870:—

	1902. Cwts.	1870. Cwts.
Wheaten grain	81,002,227	30,901,229
¹ Wheat-meal and flour	19,386,341	4,803,903
Total of wheat and flour in equivalent weight of grain	107,927,701	36,906,115
Barley, oats, maize or Indian corn, beans, rye, pease, buck-wheat	91,933,168	38,364,680
Total weight of all grains	199,860,869	75,270,795
	No. of animals.	No. of animals.
Oxen, bulls, cows, and calves	419,488	202,172
Sheep and lambs	293,203	669,905
Swine	—	96,172
	Cwts.	Cwts.
Hams and bacon	6,571,991	567,164
Mutton, beef, and pork, fresh, salted, and unenumerated	9,947,574	590,143
	£	£
Poultry and game, including rabbits	1,793,370	158,482
Sugar (unrefined), imported and retained for home consumption	12,414,144	11,856,350
Sugar (refined) imported and retained for home consumption	18,321,180	1,677,608
Total of sugar	30,735,324	13,533,958

These figures show that, in the 32 years covered by the return, the import of food-stuffs into the United Kingdom has increased by over 158,000,000 cwts., or by nearly 180 per cent. The imports of wheat and flour for 1902-3 show a further increase, the figures being 111,796,947 cwts., or an increase of 3,869,246 cwts., which still further reduces the proportion of home-grown in comparison with imported.

¹ Equivalent weight in grain, 26,925,474 cwts.

In juxtaposition with the foregoing, the following figures, exhibiting the enormous falling off in the growth of wheat in this country, are instructive:—In 1872 we grew 3,839,532 acres of wheat, as against 1,772,840 acres in 1902. In 1856, area 4,213,000 acres. Taking the average yield of 1902 as a basis, this represents in 1870, 126 million bushels, and in 1902, 58 million bushels, a decrease of about 54 per cent. If we go back to 1884, which is the first year when we have official returns of the produce of crops, we find that in that year we grew 2,745,000 acres of wheat, estimated to produce 10,258,000 quarters, and that our population was 36,331,000, and that in 1902, with a population of 42 millions, we only grew 1,772,840 acres of wheat, estimated to yield 7,285,000 quarters. This gives a rise in population of about 15 per cent., and a decrease of wheat at home of about 28 per cent., and if the two preceding years (1901 and 1900) are taken, the estimates for 1902 are about half a million bushels in excess of the two former years. The figures for 1903 show a further decrease in the wheat area of 151,000 acres, and this accompanied by a much reduced yield, estimated according to Beer-bohm's List at 5,000,000 quarters, still further augments our dependency on other countries.

It will be noted this year's estimate is 2,745,000 quarters less than 1902.

I would now ask you to compare the following figures respecting the wheat area in France, Germany, and Russia, and note the difference:—

	France.	Germany.
1871.	6,397,000 hectares. ¹	
1882.	6,977,000	1,821,000 hectares.
1890.	7,061,000	1,960,000
1901.	6,864,000	2,049,000

Russia (Europe only).

Wheat 1903, 52,203,643 acres. Increase over 1902, 1,501,371 acres. Increase over average of five preceding years, 5,082,337 acres. In barley, rye, and oats equally large increases.

The following statement for 1899-1903 of our wheat area is ample evidence of the yearly diminution of the home supply of bread-stuffs:—

- 1899. Decrease, compared with 1898, of 101,000 acres.
- 1900. Decrease, compared with 1899, of 156,000 acres.
- 1901. Decrease, compared with 1900, of 144,000 acres.
- 1902. Increase, compared with 1901, of 26,685 acres.
- 1903. Decrease, compared with 1902, of 151,000 acres.

The result of the five years, 1899-1903, exhibits a reduced wheat area of 525,315 acres.

It is interesting also to note that the average acreage under all corn crops in the United Kingdom in the period 1871-5 was 11,543,577 acres, and that in 1902 our corn crops only reached 8,517,045 acres, and even this is in excess of the previous year. This shows a decrease of about 25 per cent., as compared with 1871-5.

It is, in my opinion, a fact that the average crop of "*wheat*" is grown at a loss of £1 to £2 per acre. It is only by force of circumstances grown on the best land, and this only to a very limited extent for thatching, and in order to secure a certain amount of food and

¹ Hectare = about 2½ acres.

litter for stock, especially horses, for which oat and barley straw is not suitable. There are thousands of acres now practically producing nothing, which in bygone days yielded splendid returns in wheat, followed in rotation by abundant crops of swedes, mangolds, potatoes, cabbage, and seeds, which with wheat at a remunerative price would again come under the plough.

From published returns of home-grown and imported wheat, it appears that the home product is just about one-fourth of the total consumption, and this does not take into account the enormous importation of flour returned as 1,128,822 tons in 1901, which if sent here as wheat, would revive the milling industry, find employment for labour, and would have given us nearly 400,000 tons of bran and other offals which have been very difficult to procure of late years, and have commanded high prices. In Ireland, I am informed, good bran has recently been selling at £7 10s. 0d. per ton. This high price of offals, exceeding the price of wheat, is an anomaly which should not exist and requires the serious consideration of the legislature; and whatever is the outcome of the Royal Commission now sitting, I am of opinion that the importation of flour should be absolutely prohibited unless accompanied by a due proportion of bran and pollard, which would assist the farmer in the production of beef, mutton, and pork.

Taking the imports of wheat and flour in equivalent weight of grain for the cereal year ending 31st August last, and this year's estimate (Beerbohm's) of the home production of wheat, they stand thus: imported, 26 million quarters; home production, 5 million quarters.

It is stated on good authority that if the horses of the United Kingdom were entirely fed on home-grown grain they would consume over 80 per cent. of all that is harvested, after deducting seed for the following season. If this is approximately true, it shows the serious nature of our position, especially if anything should happen to stem the influx of the ordinary shipments of grain to this country.

In connection with this, it is interesting to compare the relative value of the bread-stuffs imported from our own colonies and foreign countries. The returns for 1902 disclose the following facts:—

		British Possessions.	Foreign Countries.
Corn and Grain	... ..	£9,448,000	£51,492,000
British Possessions, 15·5 per cent. Foreign Countries, 84·5 per cent.			

Notwithstanding this, it is satisfactory to note that whereas, taking the mean of 1871-5, we imported from British Colonies and Possessions only 10·9 per cent. of the whole, it had risen in 1898-1902 to 19 per cent., but for the year 1902 it fell to 15·5 per cent. But against this another important fact has to be considered, viz., that whereas in 1870-2 we imported only 1·4 cwts. of wheat and flour per head of the population, that in 1900-2 we imported 2·5 cwts per head. This shows that in a period of thirty years we have nearly doubled our import per head, and clearly shows our increasing dependence on outside sources.

A further analysis of the import shows that in the period 1871-5 no one country sent us quite 40 per cent. of the total imports of wheat and flour, but in the period 1898-1902 we imported no less than 62 per cent. from the United States alone. This cannot be a safe or sound position for any country to have practically a monopoly, and it should act as an incentive to our Government to stimulate the home pro-

duction of bread-stuffs to the fullest extent. To ask a plain question : What would be our position if we were at war with the United States ? In such a contingency the 9,527,475 cwts. imported from Canada, out of a total of 22,700,590 cwts. from British possessions would also be seriously jeopardised. Again, it is more than probable that owing to a bad harvest, or the increase of its population, the United States may some day not be in a position to keep up this immense supply of wheat. What would be the position of the working man in such an event ? He would, without a doubt, be compelled to pay famine prices for the staff of life.

What is the remedy ? Increase your home supply, and stimulate your Colonies to grow a larger area of wheat—in fact, make yourselves self-contained as much as possible.

The great acreage of land gone out of cultivation (which still continues) is computed by competent authorities to be upwards of two million acres, and is a most serious matter, coupled with the fact that our population is increasing at the rate of 300,000 per annum, consuming on an average 513 lbs. per head, annually of bread-stuffs and other cereals, which will necessarily help to swell the needs of the nation, and, to my mind, clearly points to the desirability, from a national standpoint (not in the farmers' interest) of making a really serious effort to increase the home supply of food-stuffs. This would naturally, in the ordinary course of events, employ more labour, and help to stem the tide of rural depopulation, and the emigration of our youngest and best country-bred folk to the colonies and elsewhere.

From a national standpoint it cannot be denied that it would be of immense advantage to the people of this country if more wheat were grown at home. If the wheat-growing area at home could be extended from 1,621,039 acres (1903 return) to 3,839,532 acres (1872 return), it would give employment to 150,000 extra labourers. This would be a grand thing for the rural districts, which, I am sure, everyone would be glad to see. It is admitted that the flower of the British Army is drawn from the rural districts, and, with the present growing depopulation of the country districts, the same class of men as formerly cannot be secured, with the result that in order to obtain recruits the standard and physique of the recruit has had to be considerably lowered.

By many it will be contended that much of the land returned as gone out of cultivation is really laid down to grass. The real facts are that much so-called pasture land has not been laid down, but has simply tumbled down, and consequently the herbage is of such a poor description that it will scarcely keep a rabbit per acre. Yet undoubtedly, to repeat my previous assertion, much of this land, with wheat at a remunerative price, could be cultivated successfully, and would yield good crops. It is well known that much land best adapted for growing heavy crops of wheat or other grain does not lay down well to grass, nor would our best meadows grow grain. Again, comparing the agricultural returns of 1871-5 with those for 1902, we find we have 1,691,119 less cattle and sheep in 1902 than in the former period, and that, compared with 1867, we have reduced the number of our pigs by 809,871 head. It is, however, a fact that we have upwards of a million more young cattle than in 1871-5, but taking sheep, cattle, and pork together, the actual returns in home-grown beef, mutton, and pork, must be less than formerly, notwithstanding

the fact that we grew 3,026,532 acres less corn in 1902 than in 1871-5. This clearly proves that the wholesale laying down of land during the last 30 years has resulted in a great diminution in the production of meat and grain for the people. What we have lost in corn has not been made up in animal food, though the feeding of stock is better understood than it was thirty years ago, and we have a right to expect a decided increase in meat production if land is of anything like the same value as turf as under the plough.

Referring to this question, an influential miller, who has an intimate knowledge of country life, writes me as follows:—"There cannot be a doubt that if more wheat (or other grain) could be raised by the cultivation of an increased area of land, this country would be enormously benefited by it, as much of the land now out of cultivation (lately in) virtually produces next to nothing. The increase would take place if a profit could be made by cultivating it. Now, should this be done by artificial means? is your question. I am rather in favour of it. First, because I think that more food should be taken out of the soil than now is, for as matters stand immense waste is in progress, and our capital, which should remain here, is flowing to foreign countries for food which might be raised by ourselves. Secondly, the stack-yard is more readily and economically managed than the storage of threshed wheat in silos or granaries, which entail a large expense. Thirdly, more labour would be employed in the rural districts, which would tend to settle the problem of congestion in the large towns, and it is to be hoped some degree of prosperity would accrue to the 'distressed' agriculturist. But what artificial means should be taken? A tax on wheat might largely stimulate an increase of growth. A tax on flour would mean greater production by home millers, and, consequently, increased demand for wheat. A bounty would also do this for the farmers, and if it was as you propose, 10s. after January, and 20s. after June, it would certainly have the effect of keeping some wheat by those who could afford it in reserve till then, but if thrown suddenly on the market the price would certainly depreciate, and an even distribution is desirable. A sliding scale, bringing all wheat grown in Britain up to say 36s. per quarter, rather commends itself to me as being less likely to upset markets, and would make wheat-growing profitable."

There cannot be a doubt that, should be come into conflict with any first-class Power, food-stuffs would rise in price enormously, and our best safeguard lies in the maintenance of a large and well-manned Navy, capable of coping with a powerful enemy, and taking such other precautionary measures as will ensure a good reserve of the necessities of life.

In connection with this I should like to quote the opinion of Mr. Brodrick when speaking at Godalming some few days ago. He said: "In time of peace our trade was our very life, and in time of war this nation could not exist more than a certain number of weeks if it were permanently to lose command of the sea."

Our present position as regards the Navy may be satisfactory, and the Government are certainly to be commended for what they have done of late years to increase its efficiency and strength, but as to our food-stuffs, we are, to a large extent, living in a fool's paradise, for what with the rigging of markets by American trusts and other gamblers, who may wish to obtain the notoriety of Mr. Leiter, regardless of consequences, we may be compelled at any time, and

especially on the outbreak of any great war, to pay extravagant prices for what may be truly termed the "sinews of war," even when the visible supply of wheat is greater than the world needs, and as it is a matter of impossibility to augment to any large extent our home meat supply, we should, by encouraging the extended growth of wheat at home, be able to allocate to a section of our Navy the important duty of acting as convoys to steamers conveying meat and other necessities of life (not bread-stuffs) to our shores.

Our position here, however, is not a pleasant one to contemplate, and points to the necessity of having a considerable section of our Navy free to act as convoys, for I find that in 1870-2 we imported only 14.6 lbs. of meat in the form of animals and animals for food per head of the population, and that in 1900-2 it had risen to 56.6 lbs., and equally astonishing figures can be given of other commodities of life. In fact, in every succeeding decade we import 10 to 15 lbs. more meat per head, and there seems to be no limit to this expansion.

In connection with the possibility or probability of a hostile country endeavouring to create a corner in wheat by putting some millions into options, I have consulted a member of a well-known firm of wheat brokers, whose reply is as follows:—"War usually is preceded by rumours and correspondence, consequently, if there seemed a likelihood of England being involved, no foreign country would get a chance of buying options in quantity from the English centres, and, of course, if they attempted to purchase in America (the only exporting country which works on the option lines), they would come in competition with English and other speculators, and our experience has been that the Yankee is well able to look after himself. If, however, by any chance they did hold a big block of American options, and England got involved, if an attempt was made to make bread-stuffs a contraband of war, I think it would be a great incentive to America to throw in her lot with us. At all events, she would not, I think, submit to having her trade ruined." This, to a certain extent, is reassuring, but after all it is only an opinion, and shows that even in this expert's mind there exists a certain element of doubt. Wars, however, are not always foreseen, and, in the event of a sudden outbreak of hostilities, especially with a country from which we derived any considerable section of our imports, we should find ourselves in a tight corner, and famine prices would be the result.¹

This increased price of wheat would not benefit the English farmer, but would simply put money into the hands of the foreigners.

By this I do not mean to imply that any steps we can take will ensure that sufficient wheat can be stored to go through a war without our ships bringing in any. This must, naturally, depend on its duration, and we must always look to our Navy to assist in convoying it. It cannot be doubted that one means of strengthening our Navy, and a most effectual one, would be to take steps to ensure the growth of sufficient wheat and other cereals, so as to do away with the necessity of any considerable number of ships being employed as convoys.

¹ Differences of opinion exist amongst corn merchants and experts as to whether any hostile nation, or combination of nations, could successfully corner wheat; but, on the other hand, there is a general consensus of opinion that nothing could prevent prices rising 50 to 100 per cent. unless we take steps to ensure an adequate reserve.

The following ideas are put forward by various authorities:—

1. The building of national granaries capable of storing ten to fifteen million quarters of wheat under Government management. There are, I think, grave objections to this scheme, as the cost and equipment would be enormous; the bulk of the wheat would have to be foreign, because of its extra dryness, and, even if it were all foreign, it would not keep long in bulk and would have to be frequently moved. The selling of this stored wheat as necessity requires would be disastrous—markets would be glutted, and prices artificially lowered, to the detriment of the already overburdened farmer, and, lastly, the cost of buying and selling the wheat in commissions alone would be very heavy. Again, advocates of national granaries would probably wish to see the system extended, and a reserve established in the raw materials, such as wool and cotton, required by our manufacturers, so as to ensure continuous employment for the artisan classes. To carry this out on an extensive scale to be of real value, would entail enormous expense of quite a prohibitive character, and could not be seriously entertained for one moment. I certainly am of opinion that, it is of vital importance that substantial stocks of cotton and wool should be stored in this country, so that our workpeople should not be thrown out of employment by scarcity of material, and one means of securing this is to make ample provision for the increased growth of bread-stuffs, so as to leave a section of our Navy free to act as convoys of the raw materials needed by our manufacturers. Further, supposing we held sufficient wheat in large granaries, its distribution in time of war would not be an easy matter, for the railway companies would be largely taken up with the transit of troops, sailors, and the necessary equipment of war, and could not deal satisfactorily with this extra strain thrown on them.¹

A better plan by far would be for the Government to make arrangements with some of our largest grain merchants or with syndicates of moneyed men that large reserves of wheat should be permanently held at our chief ports, say Liverpool, Bristol, Cardiff, Glasgow, and London. Ensure two million quarters being held at these separate centres and you would always have a reserve of ten million quarters. If the sliding duty on wheat hereafter alluded to were adopted the cost of this scheme would be considerably reduced.

2. Others maintain that the necessary store of wheat could be supplied through existing channels by freeing all imported wheat from duty that is not sold for milling purposes before the expiration of 120 days from the date of its arrival at the port, and by imposing a duty of 4s. per quarter on all imported wheat which is sold for milling purposes before the expiration of 120 days. As this would be a fairly profitable transaction, it would practically ensure seventeen weeks' supply always available unless it was put into consumption by an abnormal rise in price from some peculiar chain of events. Personally, I question if this suggestion would meet with general approval, for in

¹ Again, when one sees processions of working men and loafers perambulating the streets of London on some trivial question, it has been forcibly brought to my mind what would be the position of our national granaries if only five or six were filled with food, and there was no food in any other part of the country. Without a doubt we should require an armed force to protect them, just when we were in need of every available soldier elsewhere.

the first place, it would be difficult to earmark the corn in order to obtain the duty exemption, and in the case of a sudden panic, similar to what occurred in the spring of 1898, when it was stated there was only five weeks' supply of corn in the country, and when prices rose 10s. to 15s. per quarter, it is quite clear that a duty of 4s. would not prevent it going into immediate consumption. On the face of it, it appears that, to ensure this supply being held, it would be necessary to levy under this scheme a duty of nearer 20s. per quarter.

3. A third solution put forward, which I regard favourably, is to give a bonus on all wheat kept in stack until a late period in the cereal year, say up to 1st January a bounty of 10s. per quarter, and £1 per quarter for that kept in stack until 1st July, when we should be within a few weeks of a new supply. This would stimulate the growth of wheat, assist farmers, and keep a good deal of the money at home which now goes to buy foreign bread-stuffs. Wheat-growing does not pay at present prices, viz., 28s. 10d. per quarter, as against 46s. 11d. in 1872, a difference of 18s. 1d. per quarter; 53s. 3d. in 1853; and 113s. 10d. in 1800. It is certain that the bonus system which I have just alluded to would greatly lead to a larger wheat area at home, as the extra money return would put wheat-growing on a remunerative basis. This suggestion, no doubt, would not meet with approval in Ireland, Scotland, and Wales, unless the bounty were extended to oats, which, however, is quite as important a crop as wheat, and one which should be encouraged in every possible way as a valuable adjunct to the food of the people, who in many cases are rapidly deteriorating in stamina and vigour by the universal use of white bread, largely deficient in flesh-formers. The one objection to this is the fact that it would mainly benefit the farmer who possesses capital and can afford to wait, and does not assist the struggling man who, in many cases, would be the tenant on the heavy clays which would be brought into cultivation if wheat could be grown at a profit. It is, however, possible that some scheme could be devised for securing loans on the wheat held in stack, and at the same time safeguard the interests of the landlord.

As this bonus would come from Imperial sources, it would be paid for by the moneyed classes to a large extent, and would in no way increase the price of bread and flour.

From a military point of view, I believe the keeping of wheat in stack has many advantages. In the case of an invasion, or siege, it is easy to distribute to the population and the field army, and it also has the great advantage in the event of having to lay waste part of the country before an invading army, of being easily destroyed in detail by small quantities, instead of perhaps being obliged to hold on at all costs, as in the case of one or more large granaries situate in an undesirable part of the country for military defence simply because it held granaries of such dimensions that we could not afford to destroy them.

4. Others who have thought out the question very fully, and amongst them may be classed those men who followed the pursuit of agriculture when the growing of wheat was one of the main items of income on the farm, advocate a sliding duty on wheat so as to ensure a uniform price of 40s. per quarter. To explain the working of this the following figures are given:—If wheat is 30s. per quarter, the duty would be 10s.; if at 35s., the duty would be 5s.; and if at 40s. or more, there would be no import duty. In the case of the Colonies and our

own possessions, a rebate of 2s. per quarter would greatly stimulate wheat-growing amongst our own kith and kin.

As bearing on this, I should like to give the opinion of the Hon. George W. Ross, Premier of Ontario. His opinion is that a preference for Colonial corn of 2s. per quarter would be of incalculable advantage to Canada, and he goes on to say that in five or ten years' time Canada could send us 30,000,000 bushels of wheat. Again, Mr. R. H. Hooper, of the Produce Department, New Zealand Government Office, London, writing to correct a newspaper statement on behalf of the Agent General, says New Zealand possesses a temperate climate, well adapted to the cultivation of cereals, the average of wheat per acre for the whole colony for the past twelve years being $26\frac{1}{2}$ bushels and 34 bushels for oats. That as to labour there is plenty of the right material, and that the farming methods are correspondingly efficient. The reason why New Zealand now does little more than supply her own requirements of wheat cannot then be ascribed to natural drawbacks or individual difficulties. It lies in the fact that other lines of produce are found to pay much better than wheat, and only a very substantial rise in the price of that cereal would alter the position. That New Zealand can readily produce large quantities of grain to take advantage of a remunerative market is shown by the heavy shipments of oats to South Africa during the last three years. If these statements are true, why not assist our own kith and kin with marked advantage to ourselves at the same time?

It is stated on good authority that in 1883 the average price of wheat throughout the year was 41s., and that the 4-lb. loaf was then sold at sixpence. This sliding duty, it is contended, would, aided by science and the improved agricultural appliances which have reduced the cost of production, largely increase our wheat area, as it would once more become a profitable crop. If we only doubled this year's estimate of 5,000,000 quarters of home-grown wheat, it would mean that farmers would have £10,000,000 more to spend in the rural districts, a large amount of which would be expended in labour and amongst the tradesmen in the country towns, and at the same time it would not materially raise the price of bread. This money now goes abroad to assist foreigners to compete against us in other commodities in our own markets.

5. A proposal which has many supporters, and is certainly deserving of every consideration at the hands of those who have the sifting of the wheat from the chaff, so to speak, which perhaps would appeal more strongly than any other to the farmer with lack of capital (and they are many, and therefore obliged to thresh as soon as marketable) is to give a bonus on all wheat grown at home; but this would not, in my opinion, ensure a reserve so effectually as the deferred bonus or sliding duty.

Others maintain that a tax on flour only would practically ensure an increased growth of wheat, but even if it did, I fail to see that it would ensure the reserve requisite in the event of an outbreak of war.

Whatever solution of the difficulty is suggested, we should always be met with the cry: "Why should public money be used to bolster up agriculture, when the world at large is prepared to send us cheap wheat?" Before bowing to this statement, the country should be absolutely sure that no failure in the supply would follow in the case of a great war. Armies and Navies have to be paid for as an insurance

against possible trouble and interference from outside sources, and surely food should be placed in the same category, and a reasonable sum expended annually as an insurance against any contingency. The cost of these services for the last and the present financial years is as follows:—

					£
Army	1901-2	...	...	...	92,915,000
	1902-3	...	...	...	69,310,000
Navy	1901-2	...	...	...	31,030,000
	1902-3	...	...	...	31,255,000

The country cheerfully acquiesces in the spending of these enormous sums in building war-ships and in maintaining an Army, and I cannot help thinking that if the average citizen clearly understood that in spite of our costly Navy and Army we might be blockaded and starved out, he would readily endorse any scheme the Government propounded for increasing the home supply of wheat.

In the interests of trade and commerce, immense sums are expended each successive year and will continue for all time, and a due proportion of this expenditure is paid for by agriculturists. I refer to the salaries of our consuls, the subsidies paid to shipping and telegraph companies to afford prompt means of communication, and lastly the maintenance of a large Navy, whose services may be required at any moment to safeguard our mercantile marine. Taking these facts into consideration, it does not appear unreasonable that a modest sum should be annually applied to promote the welfare of wheat-growers at home, especially when it can be proven that such an expenditure will achieve a two-fold object, viz., a greater reserve of bread-stuffs, and that it will tend to lessen the annually increasing difficulty of procuring Army recruits that come up to the desired standard of physique.

In putting any of these propositions forward, farmers must try and remember that legislation to prop up any class will not find ready acceptance with the legislature, and it is essential that the great masses should be educated to realise that some means of promoting the growth of wheat at home, aye, and all cereals essential for the support of the nation, is the cheapest and most effectual way of being prepared for war. To put this tersely and clearly is the object of this paper, and I trust I have in some measure succeeded in putting forward some facts and arguments before you that are worthy of your serious consideration.

In connection with this question, there are several other minor ways of stimulating the production of more household food at home, such as to ensure that farmers can have their goods taken to markets at rates that do not exceed the rate per ton charged on imported goods, 12s. per ton New York to England. Fraud of all descriptions should be stopped, and goods sold for what they really are. Foreign meat should not masquerade as English; woollen goods should be made from pure wool, and not consist mainly of cotton and shoddy, and many other frauds should be put down with a stern hand.

Probably the security of a dead meat trade, which would absolutely ensure the safety of our herds and flocks from imported disease, would stimulate and encourage our breeders to greater efforts, and this, with the assistance of cheaper offals, would enable the British farmer to compete on better terms with the foreigner.

On heavily encumbered estates in need of draining and other improvements, the Government could with safety advance 75 per cent. of the low value of land at $2\frac{1}{2}$ per cent. in perpetuity, and this would, in my opinion, largely tend to increase production. This especially applies to heavily encumbered estates which, in many cases, require draining and the erection of suitable farm buildings and good sanitary dwellings for labourers, with proper accommodation for rearing large families of strong, healthy children, which would result in doubling or trebling our rural population, and would ultimately supply the nation with men of good physique for our Army and Navy. To stem the tide of rural depopulation and allure the best class of men back to the land, the labourers' cottages and surroundings in the country must be made more comfortable and attractive, otherwise the gravitation to the towns will continue in increased numbers.

In many instances landlords have not the means of carrying out these improvements, and these are cases where Government could advance money at a low rate of interest which would be of untold advantage to the country at large.

The following census returns for 1851 and 1901 speak for themselves:—

	1851.	1901
Agricultural population ...	1,904,687	998,340
Difference,	906,347.	

Mr. S. B. L. Druce in a very interesting paper recently read at the Farmers' Club on "The 1901 Census of England and Wales from the Agricultural Point of View," gives the following figures:—

1851 ...	...	1,928,796
1901 ...	...	1,128,604

Difference ... 800,192

These figures, however, do not show the worst side of the case, viz., that our agricultural population is now mainly composed of old or middle-aged men, and that comparatively few young men can be classed as farm labourers. The number of males and females in 1901 classed as agricultural, under 20 years of age is only 195,141, as against 427,562 in 1851.

To deal further with this question, anyone who is conversant with country life will bear out the statement that in twenty years' time there will be hardly anyone left on the land who is what may be termed a skilled labourer. In this class I put men who can make a stack, thatch a stack, lay a hedge, etc., and the only means that I can see to turn the tide is to take some means of making agriculture more prosperous. To achieve this I strongly urge the Government to take steps to make wheat production a remunerative calling, and put farmers in a position to pay better wages. This will solve a great national problem by increasing the agricultural population, as increased wages will lessen the gravitation to the large towns, which has been such a noticeable feature during the last 20 or 30 years.

There is no doubt that if wheat-growing could be once more made fairly remunerative, the question of rural depopulation would be greatly solved, because wages in the country would naturally tend upwards, and the rising generation would find full employment on the

land, with the result that in a decade or so we should have a much better class of men for naval and military purposes.

In discussing this question with practical farmers, they all state that if wheat-growing paid, it is a better farmer's crop than barley, because it has always a ready sale, the straw is more bulky and more valuable, and the crop can be harvested much more easily than barley in indifferent weather, such as we recently have experienced.

From figures taken from the returns, it appears that out of every 1,000 recruits for the Army in 1891 and 1892, no fewer than 640 and 647 were labourers and husbandmen, and in 1901 and 1902 the corresponding figures are 640 and 669 respectively. This is a very striking proof as to the material of which the majority of the Army is composed. To demonstrate the absolute necessity of stemming the tide of rural depopulation, it has been stated, on the authority of *The Times*, that out of upwards of 11,000 men who offered themselves in the Manchester district for South Africa, only about 1,000 were accepted.

As bearing on the question of the Army recruit, I should like to give a few quotations from "The Annual Report of the Inspector General of Recruiting for 1902."

On page 13 the Inspector alludes to the fact that as a tentative measure a certain number of recruits for Infantry of the Line were accepted below the required standard, and that instructions were given to take certain men down to the minimum height of five feet, provided they were below 20 years of age, and were in all respects qualified, and that as a matter of fact 530 of such men were enlisted. To the lay mind, this conveys an impression, rightly or wrongly I am not able to say, that a sufficient number of men of the required standard were not forthcoming.

Again, on page 15 it is shown that out of a total number of 87,609 men medically examined in 1902 there were no less than 28,221 rejected, and in the case of 8,547 the cause of rejection was want of physical development. The total number not accepted being 32 per cent. of those examined.

It is further noted that the percentage of recruits rejected is considerably higher than for the last two years, and when examining these totals it must be borne in mind that they do not represent anything like the total number of rejection of candidates for enlistment into the Army. A large number of men are rejected by the recruiters for the causes above mentioned and are never medically examined.

Again, on page 30 appears the following:—The one subject which causes anxiety in the future as regards recruiting is the gradual deterioration of the physique of the working classes, from whom the bulk of the recruits must always be drawn. When it is remembered that recruiters are instructed not to submit for medical examination candidates for enlistment unless they are reasonably expected to be passed as fit, one cannot but be struck by the percentage considered by the medical officers as unfit for the Service. In the reports from all the manufacturing districts stress is invariably laid upon the number of medically rejected for bad teeth, flat feet, and inferior physique.

To quote Mr. Brodrick again at the Godalming meeting, he makes use of these words:—"He was for a strong Army, for a well-equipped

Army, and for a highly-educated Army. In saying this he put himself in opposition to those who legitimately held that a strong Army incited to expeditions, and still more brought him into conflict with those who were fond of being Imperialistic when Imperialism only meant words, those in fact who wanted to conduct their Imperialism on the cheap." This clearly shows that he is prepared to expend any reasonable sum in order to secure recruits to build up a strong Army.

The whole question, to my mind, may be summed up:—

- a. By ensuring our naval supremacy; and taking all the necessary steps to increase our agricultural population.
- b. By the increased production of home-grown food; and
- c. By the taking of proper steps to ensure an adequate reserve of food-stuffs and raw material to meet every contingency.

In conclusion, I wish to acknowledge the assistance I have received in preparing this paper from various sources, and to express a hope that my humble efforts to put this interesting subject before you will meet with some measure of approval at your hands.

Admiral E. FIELD, C.B.:—I beg leave to trespass for a few minutes on your kindness in order to make a few friendly comments upon this able lecture. I am delighted to see a civilian of ability come forward in this theatre to advocate this question, and to explain it in all its bearings so admirably, as he has done this afternoon. Far better it is for a civilian to do this duty than a naval or a military officer, because whenever any of us attempt to deal with a problem of this kind, whether in the House of Commons or outside it, we are always spoken of, not exactly in terms of contempt, but as if we have some ulterior aim either to double the Navy or to double the Army; but nobody can accuse the gentleman who has written this paper of having any ulterior motive, but only that of patriotism and a desire to benefit his country. This question is not new, it has been raised in the House of Commons by many Members, but it has fallen on deaf ears. I myself had a motion on this very question, and had worked myself up splendidly, and my head was crammed with information obtained from all quarters, including the High Commissioner of Canada at that time, Sir Charles Tupper, and many others. But the difficulties of raising the question there in all its bearings are extreme. I got Sir John Colomb to promise to second the motion, and the House was well filled, when an ominous message came from the Speaker informing me that my motion was out of order. I intended moving my motion on going into Committee on the Navy Estimates; I thought there could not be a motion more in order, but I was told: "No, it must be germane to Navy Estimates, and nothing to do with food supply." That illustrates the difficulties which are in our way. But now and then an opportunity does offer; and the question which Mr. Mansell has alluded to so ably in his paper about the establishment of national granaries—which I did my best to oppose with all my might—offered an opportunity of introducing the question of food supply. How were those who pointed out the danger met? We were met by that magnificent leader of the Opposition, Sir William Harcourt—a charming personality—who ridiculed the whole idea, by advancing arguments that we wanted to put money into the landlords' pockets, to improve the position of the farmer, and to worry the taxpayer; but he had no fear—he never has any fear—of any failure of food supply: "It is bound to

come in under neutral flags," and never mind whether the country likes it or not. As I say, this question is not new at all, but it has never been so ably put before the public—and I do hope it will be put before the public—as in this paper. At last we have got a Commission sitting on this question, appointed by the Government in answer to appeals and deputations waiting on the Prime Minister. I am grateful for that, because now I believe the truth will come out, and the nation be informed. There is one paragraph in the paper which I would rather have seen omitted, though the lecturer does not intend to offer any reflection upon us, I am certain. He says in the paper:—"Upon the present occasion the paper I have prepared is to be read at an Institution composed almost entirely of soldiers and sailors, and though the duty of considering the food supply of the nation may not be included in the ordinary routine of the officers of our Army and Navy," etc. I know nothing about the officers of the Army; I know a good deal about the officers of the Navy; and I say that I have known distinguished men, when there was a possibility of war with Russia in 1885, men who might have been called upon to command fleets, who told me that they could not put their heads on their pillows at night without thinking of the danger this country was in on this question. We do think of it. The problem before naval men who may be in a position of responsibility in any future war is infinitely more difficult to solve than that which our noble Nelson had to deal with. In his day there was no question of food supply or raw material; the country was self-contained; but now God help the country if the Government falls to sleep and will not deal with the question of victualling the garrison. I mean the population. I say it is the prime duty of the Government to make the country safe and secure, as far as human effort can do it in the event of a possible war, and not to leave the feeding of the population and the raw material for the working of the factories in Manchester and elsewhere to come in as it best may. Therefore the lecturer is doing a very great service to-day in bringing this paper before us. I do not wish to challenge his figures in the least, though my information is not quite on all fours with his own; but I would like to take him and the audience back to one very important point. The last time we were at war with Russia in 1855, how stood the question then as compared with the question now if war broke out? I carefully compiled these figures years ago for the House of Commons. In the Crimean War our population was 28,000,000; it is now 42,000,000. Then we grew 16,000,000 quarters of wheat of our own, and the lecturer has pointed out that we now only grow 5,000,000 quarters with 42,000,000 people to feed. Then there were 4,500,000 acres of wheat, now there are about 1,670,000 acres; so that we are going down, down, down, all the time. Our population is increasing, and our land is going out of cultivation. I say, therefore, that the problem the naval men of the future have to consider is vastly more serious than the condition of affairs Nelson had to deal with. Nelson could go wherever he liked, but now an admiral will have to think, "How about the population behind me if the Channel is left empty of cruisers?" What is the remedy? I must not trespass on the time of the audience because there are others to speak, and I believe we are limited to ten minutes, though on this question it is very difficult for any man to limit himself to ten minutes, and to deal with any central point in it. But I would say, What is the remedy? The remedy is not national granaries; the remedy is to do by legislation what is possible by human endeavour to bring more land into cultivation in this country. The remedy the lecturer points out—I will use his own words—is this, "Increase your home supply"—quite so, we are

all agreed—"and stimulate your Colonies to grow a larger area of wheat." In fact, make yourselves self-contained as much as possible. Then, Sir, in order to carry out that policy I say with all my heart and all my soul I support Mr. Chamberlain in his policy. I say the Government will have to deal with it—I must not talk politics in this room—but I believe the country will speak with no uncertain voice, and I mean to strain my lungs to their utmost power to try and drive home truth into dull heads and unwilling minds.

Captain STEWART L. MURRAY (The Gordon Highlanders):—The interesting lecture we have just listened to has dealt chiefly with the subject from an agricultural point of view. Far be it from me to belittle in any way the agricultural point of view, but there are other things to be considered as well. I notice that the lecturer has said very little about the class which will chiefly feel the stress of a maritime war, that is to say, the great population in the slums in our congested cities—the people of whom we have heard a great deal lately, that is to say, the six or seven or eight or ten million people, according to the various estimates; at any rate, the several millions who are living on wages of twenty-three shillings a week and under. What will happen in war to those people? The first thing we have to consider, of course, is the Navy. We all know that if the Navy be defeated we shall get no supplies whatever—that goes without saying. It is hardly necessary to elaborate that point in this institution. We all wish the Navy to be a great deal stronger than it is now; we should all like to see it five to three against any possible opponents; but that is not quite the question to be dealt with on this occasion. The point I wish to make is: What would happen even if our Navy does keep command of the sea? We have to look upon events exactly as they are. What would happen if war was declared to-morrow, for instance? Suppose our Navy, after four or five or six critical months, did succeed in gaining command of the sea; still, that would not do away with the great question of the *price of food*. Last year there was a declaration signed by all the leading corn merchants of the country saying that in the event of maritime war the country must be prepared to see bread at *famine* prices. That is the first great fact we have to keep in mind, that if war broke out to-morrow, whether or not the Navy kept command of the sea, bread would be at famine prices. Then there was a declaration signed by 120 of the chief Trades Councils of the kingdom, stating that there were 7,000,000 people at least in the great towns who would not be able to pay the famine prices. That is the second great fact. What is to be done, then? We know that bread will be at famine prices, and all foods in proportion, and we know that there are 7,000,000 people who will not be able to pay those prices, and there is no organisation to deal with them. What would be the result? Very much in this country as what happened in Ireland in 1847, as far as I can see. In 1847 there was a very terrible famine in Ireland. The Government endeavoured to deal with the matter, but there had not been any preparation beforehand, and consequently they experimentalised. They tried first one system; that failed. They tried another system, and that failed. Then they tried a third system, which succeeded, but not before there had been two previous failures. We do not want to see that kind of thing in this country. We do not want to see from six to twelve million starving people, and then have experiments made which will result in failure, and, finally, perhaps defeat. What we want is to see everything organised beforehand, in order that when the stress comes those millions may be

fed—in order that we may get the food into the stomachs of the people. That is the chief question, to my mind, which has to be settled. There ought to be some great organisation prepared beforehand to deal with the matter. Of course, when this great stress does come, it will fall first and foremost on the Poor Law. The Poor Law at present is organised to deal with, I believe, about 21 per cent. of the population. What sort of difficulty would it be in when it suddenly had to deal with 30 per cent.? It would all be at sixes and sevens. As far as I can see, there is no earthly reason why the Poor Law should not be organised now, so that when the stress of maritime war comes it will be able to deal with 30 per cent. of the population. It is purely a matter of organisation. There is nothing to stop it, except that it is not done. It is only necessary that the Poor Law officials should be asked now to apply their brains to the problem instead of waiting till war comes. That is one of the first things I consider to be necessary—that the Poor Law should be organised now in peace so that it can deal with the stress of maritime war. Then, if that is properly and efficiently done, we shall be able to wait with a certain amount of quietness and confidence for the clearing of the seas by the Navy, for the finding of new channels by trade, and for the gradual working of the remedial methods adopted. There are one or two gentlemen present who will perhaps say something from the point of view of the labouring classes, because those are the classes which, as a rule, are not voiced, and ought to be voiced. In considering this great national question of Food Supply in Time of Maritime War, it is above all things necessary to keep matters in their proper proportion, and to avoid being led into attaching undue importance to side issues. It is therefore useful to reiterate the general state of the case. The subject resolves itself broadly into three headings, which I mention in their order of relative importance. There is, first, the great question of the Navy, a Navy which ought to be as strong as it is financially possible to make it, strong enough to at the same time drive the hostile fleets off the seas and hunt down their commerce-destroyers so as to completely protect our supplies of food and raw material. But such complete protection is at present only an ideal towards which we aim. At present we have not got it, or anything like it. There is, secondly, the almost equally important question of how the millions of poor in our great cities are to be fed during the first few initial months of naval warfare, in order that they may not, under the fearful pressure of famine prices, cry out loudly and violently for peace at any price. For all food will be at famine prices: of that there can be no doubt. And there are in our cities at least 7,000,000 souls in poverty who could not pay famine prices. They must be fed, or we cannot fight the war. To deal with such vast numbers, from seven to ten millions, of semi-starving people will require most thorough organisation, carefully thought out and prepared beforehand. The solution lies in the careful organisation of the Poor Law now, so that in war it can deal with 30 per cent. of the population if required. There is, thirdly, the question to which the lecturer has to-day addressed himself, namely, by what remedial measures can our growing dependence on foreign, and perhaps hostile, sources for our food supplies be best minimised? How can our stocks of food in this country be best increased? The lecturer has suggested certain remedies, which, no doubt, are with others being at present considered by the Royal Commission which is now sitting. Till their Report is published, it is wisest to suspend our judgment as to which remedy, or combination of remedies, would be best.

Admiral of the Fleet Sir NOWELL SALMON, B.C., G.C.B. :—I have given some little attention to this subject for the last five or six years, so that it is quite familiar to me. There is very little new to be said about it. I must congratulate our lecturer on the very able and comprehensive statement of the case he has given us, but if he will excuse me for saying so, I think he showed us the disease but is not very sure about the remedy. He thinks the best remedy is to increase the production of corn in England. Well, I can only say that I live in the country myself, and I see how the agricultural population is dwindling away—how the boys go from school into the towns as messengers to the tradespeople and so on rather than go on to the ground as their fathers did. That is all attributable to the much higher education that is given them; they consider themselves above the status of agricultural labourers. I do not see how you are going to get over that difficulty, to begin with. Another objection to the point of view of increasing the production of corn is, Who among us is prepared to put his money into that business? It is a losing business. The farmers want straw, and therefore they must grow a certain amount of corn, although they grow as little as they possibly can; and I do not see how you can induce them, except by means of bonuses, to increase that production, even supposing they got the labour. The question of bonuses is a very serious one. The bonus is subject to misuse to a very great extent. Not long ago I attended a lecture on the same subject given to a farmers' club in a little country town near which I live. The amusing feature of the case was that the lecturer found himself confronted by three admirals, and three admirals only; there was nobody else in the room. He said, "I am very sorry, gentlemen; my lecture was not intended for you, so you will excuse me." "Oh," we all said, "go on and give us your lecture. It really affects us a great deal more than it does the farmer." The lecturer rather suggests that it is not the proper business of the Navy to protect our routes of food and raw material. I combine the two, because I think the one is as important as the other, or very nearly so. I am quite sure that as naval men we consider that it is our business. Our business is to keep the country alive. If it were not for that what is the Navy to do? We are not built and armed and sent to sea simply to fight foreign men-of-war, unless those foreign men-of-war are interfering with our trade routes, or interfering with us in some other way. That is what we are for—to protect our routes. I hope you will excuse me for quoting a great authority, the Secretary of Lloyd's, who said about five or six years ago :—"No form of insurance was practical except keeping up a strong Navy and Army, and also as a second line of defence a reserve of wheat." There is the whole problem in a nutshell. A strong Navy we must have. We may hope that, to a certain extent, but not at the beginning of a war, the trade routes may be kept free; at the commencement of a war I have no doubt they would be very much interfered with. What remains left of the question is that till we have got these trade routes safe, and we can import our food stuffs and our raw material which will enable the poor man to buy his food stuffs—till that is possible we ought to have some reserves. And how are those reserves to be established? There is but one way that I can see: I shall be very glad if anybody can point out another—and that is national grain stores. You must say one thing or another, and I say national grain stores. I am quite aware that they might be subject to all sorts of misuse, but it is the business of the Government to establish them on such a footing that there will be no abuse of them, so that the corn will find its way to the consumer as regularly and as economically as corn does now through the corn merchants.

I think that is all I have to say, except to emphasise that we must pin ourselves down to an opinion, one thing or another, in adopting some means of providing the food stuffs.

Mr. J. MACDONALD (Secretary of the London Trades Council) :—I have been invited to attend this meeting to listen to the paper, with which I am exceedingly pleased. The question of food supply in time of war is one which essentially affects the working classes. Of course, our food supply at all times is a matter of grave apprehension—in either peace or war. Even in times of peace it is difficult for our class, the working class, to get a sufficiency of the commonest or coarsest of food, and we know full well that, in the event of any crisis occurring, the amount we get now, or can obtain now, would be considerably shortened, not only because of the very great rise in the price that is bound to take place, but also because wages would decrease and employment would decrease in many industries. Mills and factories would either be shut up or be running on short time, and when that is the case wages, of course, are not obtainable by the working man. I do not know why it should be that the section of the community, and that the working class section, who do the work, should be the first to suffer, though willing to give useful service. They are willing to do hard work, and I do not think it is right that they should be called upon at first hand to be sufferers because we happen to be at war. In olden times it was much different. I have read—all Scotchmen have read—the Bible, and I find that when there was a scarcity of food in one country, the people said, "Let us go to Egypt, and we will buy corn." There was no Chicago Wheat Market then; there was no Leiter; there was no gang of international financiers whose only object was to screw up prices. They went to the king of the country, to the national granaries, and they said, "Let us purchase corn." Why not now? They must have been much more sensible, much more careful of the people's condition than they are now. Fancy an agricultural labourer coming from Norfolk or a blacksmith from the Clyde up to Buckingham Palace or Windsor Castle to buy corn! He would be laughed at, and looked upon as a madman or a lunatic. But why not? The Government exists to take care of the people, to look after the material interests of the people, to secure for them a maximum of enjoyment for a minimum expenditure of force. I think the lecturer has fallen short of the remedy. A bonus here and there to encourage industry may be very good, but that is not showing to me, as a working man, how I am going to get the food. You may very likely get your Navy strengthened double. You may dot the seas with your ships, but how are you going to control the Chicago Wheat Market? You may say, "We are going to encourage wheat growing; we are going to encourage the agricultural industry of the country; we are going to put a bonus upon every quarter of wheat grown or stored," but that does not show me how you are going to feed me if I have no work. If the blacksmith is out of work because there is no work for him, if the tailor is out of work because there is no demand for his commodity, if the bricklayer is out of work because there are no houses to build, the mere giving to the landowner of a two-shilling or five-shilling or a pound bonus on a quarter of wheat is not going to feed the people. It may make it very comfortable for him, and I have no doubt it will, but that is not putting bread into the stomachs of the people, as Captain Murray said—by the people I mean the vast bulk of the population who are likely to be on the verge of starvation. I know that it will not materially concern the majority of this audience; their sym-

pathies, and all that, will be excited on behalf of their fellow countrymen. But what about the working man who has got to stare the hard facts in the face?—the working man with a wife and five children, whose earnings at the present time are anything between a pound and two pounds a week, and generally he has as much as he can do to keep alive and send his children to school with their breakfast—and there are a good many of them who cannot do that, according to the recent return. What is going to happen with a stiffening of prices? What is going to happen in the case of a shortage of supplies? Trust to the generosity of American capitalists? Trust to the self-interests of American capitalists, who would screw the prices up a hundred-fold if they could for the sake of making more profits on their investments? Trust to a bonus to the agricultural industry to encourage our farmers to grow more wheat? That will not do for me; that will not do for the workers. You must give us some more definite plan than any you have laid before us yet before you can convince us that we are going to be cared for in the event—the most disastrous and un hoped for event—of a European war. We do not want to face it, but if we do face it we know what is going to happen. You will see hundreds, nay thousands, of men, strong and able and willing to work, parading your streets and not able to get work, and, not being able to obtain work, they cannot get food. It is no good telling them that you are going to give a bonus of a pound for every quarter of wheat stored up; that will not satisfy them. They will tighten their belts one button, or even two; they may parade the streets with no soles on their boots, and leave their children and their dependents hungry at home. They may do that for a little while, but when it comes to affecting the better class of workmen, the skilled and the half-educated or better educated workmen—when it comes to affecting them, don't you think they are going to parade the streets with no boots, don't you think they are going to depend upon the rattling and the jingling of a few coins in an almost empty collecting box. They will not do it, and they would be fools if they did. They will reason it out with themselves, and they will say, "If there is no food in this country, how comes it that our governing classes, who have usurped us and have taken to themselves the right of government, because of their superior intelligence," etc., etc., "how comes it that they have not made provision to feed us and our dependents?" It is no good to them that you have made provision by paying so much extra to the landlord or the farmer; they will not have that; they will say, "If there is food in the country we mean to have it," and as they are numerically strong it is very likely they will take it—at least they will take their share of it. That is what you have to face; and frankly I say that did such a condition arise I should be one of the very first to advise the working men who have produced the food to go and take it if they are hungry, and not allow it to be stored up, and not allow other men to make a plaything of the people, and whose only desire is to make a profit. To make a profit out of the hunger of the people is the most abominable and despicable thing I can imagine. We will not discuss it, we cannot reason about it; though in America or in Moscow or in St. Petersburg, or wherever it may be, they will immediately discuss, "There will be so many million quarters of corn required in England, and if war is declared up goes the insurance rates 100, 200, 500 per cent." They will say, "There is no grain there; we are going to corner it, and they will not have it unless they pay ten times its value, and they must pay it because the people are starving." They will trade in order to make a profit on the people's hunger. I say that when you are discussing these matters you should take into consideration the desirability of consider-

ing the advisability of the food supply of any people, or of any nation being put entirely under the control of the people of that nation. To have a Government whose first duty would be to see that society is so organised that no man who is willing to work, no woman who is willing to give useful service to society, should go short of food, whether in peace or war—that is the mind in which we workmen now approach the question. Anything such as we have discussed here to-day is helping us and inciting us and spurring us on to further exertions in the way of investigating the position which we occupy. In the event of war, if the Government of to-day has not made provision to feed the people and feed them properly, then I think the people will seek to feed themselves.

Major-General Sir G. A. FRENCH, K.C.M.G., R.A. :—I wish to make a few remarks with reference to the very valuable paper that has been read. There is one point in the paper which I dissent from, in which the lecturer referred to the evil of numbers of men being sent to the Colonies and elsewhere. I quite agree with him as regards elsewhere, but I see no evil, in these times, in a large number of our superabundant population being sent to the vast Colonies that we have across the seas. You talk here of one million acres extra being put out of wheat. Why, a million acres is a mere bagatelle in the north-west of Canada. I think there are something like two hundred million acres there waiting for people to grow wheat on, and why not take as many of those people as you can and put them in a country where they can grow that wheat? That will dispose of a certain number of the surplus population. If you could keep out the undesirable alien also there would not be so many to feed if a war came. I have listened to what Mr. Macdonald has said with great attention, and I sympathise with him; he represents the class on which the pressure would come. He has alluded to the method by which corn was stored up in Egypt. I think it is a remarkable fact that that was owing to the foresight of a gentleman called Joseph; and I am glad to say we have got a Joseph now with a backbone in him, a man who knows the Colonies, the finest Colonial Minister that Britain has ever yet produced; and I sincerely trust that he will in time be able to show how this problem has to be met, and you may be sure he will do it in a proper way. He is a man who has the courage of his opinions, who has given up office in order to set forth and advocate his scheme for the improvement, not only of this country but of the Empire at large. I think myself, in regard to the question of food supply in time of war, that if a little assistance were given to Canada to populate the vast territories they have there the question would be very greatly simplified. Those who have lived in Canada know what a fine route there is by water right down to the Gulf of St. Lawrence. Passing out from the Strait of Belle Isle, grain-laden ships will be far far away from any enemy's bases, and where there would be protection and coal for our cruisers. The protection of a convoy coming that way seems to me would be vastly more simple than one coming in from the south through the English Channel; in fact, I believe it is correct that, in the case of a war, bringing vessels through the English Channel would be scarcely possible. In addition to that route which we have from Canada there is the question of the Hudson Bay. That will open out a still safer route for grain-laden vessels from the far north-west of Canada. There are matters, I think, which the Government of this country may look to and remedy. I am not a believer, having been for some twenty-six years in the Colonies, of any Government dry-nursing the food supply, but there is one point on which we may call on the Government

to act: that is, that they should see that all our home and foreign stations possess at least a six months' supply for the garrisons. I believe the food supply now at such places is very trifling indeed. If at the commencement of the war the Government let out big contracts without regard to expense, for all sorts of food, for the military and naval forces, what would the result be? Just as Mr. Mansell said. Provisions would be raised to an abnormal price, and what is the poor working man to do then? He may not have work, and he will have an immense price to pay for his food. I think the Government might save the country any such experience as that by being able to supply the fighting forces for five or six months. That is a matter we may reasonably expect the Government to do. I do not, as I said before, expect the Government to enter into any grain-selling business; I think the public might attend, as they always do attend in British-speaking countries, to all matters connected with trade and commerce.

Admiral F. ARDEN CLOSE :—As I was the original alarmist who hoisted the danger signal in the *Morning Post*, under the head of "War, Famine and Surrender," it is not likely that I shall disagree in any way with the words of this lecture. There is nothing very new in the lecture; but still the danger is great. If your house was on fire you would not stop after shouting once; you would shout as often as you could; so we commend the lecturer. How hard we have had to fight to bring the country to an acknowledgment of the danger, most of you know; how it was taken into Parliament twice, and almost ridiculed; and it was only after a public dinner that Captain Murray and myself—I being in the chair and having read a lecture on the subject—said, "We have talked long enough; let us establish some association." And from that association, I as treasurer, and he as secretary, got the Duke of Sutherland to take an interest in it; and it was the Duke of Sutherland and Mr. Chaplin who brought this subject before the Royal Commission that is now sitting. The question that Commission has to solve is: How is it to be done? Shall it be magazines of wheat, or shall it be wheat in stack? Wheat in stack was originally suggested by me about fifteen years ago; but magazines seemed to be more popular in the eyes of Mr. Yerburch, M.P., and Sir Seton Kerr, M.P. For myself, I would say to the military authorities: Establish magazines of corn sufficient not only for your men but for your horses; and as for the rest of the supply for the nation, it should be, as suggested by the lecturer, by the farmers being subsidised. We spend £31,000,000 a year on the Navy. You might as well chuck that money into the sea for all the good it will do, for what is the use of our going to sea and winning Battles of Trafalgar if we leave a starving population behind? How is that danger to be avoided? The lecturer has told us that we have 2,000,000 acres of land lying idle that were once sown with corn. A subsidy of £2,000,000 to the farmers will restore most of the cornfields. Also, I would ask: Are there any military magazines in this country? There were not, I know, some years ago, because when I sat here, Lord Wolseley, being in the Chair, said:—"This food question is a bogus question got up by naval officers for the aggrandisement of their own Service." The present Commander-in-Chief has established a magazine of food at Dover. But, when the day of trial comes, who are to have the food—the artillery horses or the starving poor? There must be some provision made, and surely a million or two is not too much to ask for, if it makes the sixty millions we now spend on the Army and Navy of any service. The lecturer has made use of an expression in the paper which

may be misleading. He says that in spite of our costly Navy and Army we might be blockaded and starved out. I do not think he means that our ports can be blockaded, because, as a naval officer, I think it is hardly possible. It is no use your boasting "that we have a powerful Navy, and therefore, having command of the sea, our food supply is safe." You cannot get a naval officer to say so. We never have had command of the sea as far as the protection of our merchant-ships is concerned. If there was a period in the history of this country when we might say we had command of the sea, surely it was after the battle of Trafalgar; there was not an enemy left on the sea. Yet after that battle hundreds of our merchant-ships were captured, and it will be so again. We cannot protect our merchant-ships; the thing is impossible; but I believe also that a blockade of our ports is impossible. The true blockade will be the impossibility of our ten thousand slow merchant-ships obtaining any insurance, and being laid up useless, as the United States merchant-ships were laid up when the "Alabama" was about. This will prevent the weekly arrival of the 400 merchant-ships which bring us our food, and cause a panic on the corn market, the enemy having made food contraband of war. Landsmen hug themselves with the idea that having a powerful fleet our food supply is safe by means of convoy. The struggle and danger will be in the first month or six weeks of war. If we can tide over that then you may talk about convoys; but during that period the whole strength of the Admiralty will be strained to despatch our ships to sea; for to engage and defeat the enemy must be the first consideration, and the protection of our merchant-ships must be the second consideration.

Colonel ERNEST GRATTAN (late Army Service Corps): — The paper we have heard is of a very interesting character, but to my mind the issue raised by it is of a somewhat misleading nature. The real question to be answered is not, by what means we can accumulate this or that number of months' supply in Great Britain, but by what method can we secure our trade routes, that is, our lines of communication, against hostile interference? If it is necessary to secure the lines of communication between an army in the field and its bases, it is obviously of vital importance to secure the lines of communication between this country and its oversea food bases, though the object must be attained by entirely different methods. An army guards its lines of communication with troops; a navy, on the other hand, seeks out the enemy who would interrupt the communications for which it is responsible with the view of preventing him from doing so. If it is necessary to have an excess of six or more months' supplies in hand, above the normal quantities, on the outbreak of war, it affords unmistakable proof that we are not prepared for eventualities, and that we contemplate that our Navy may be defeated. The object of accumulating reserves would be to give us time to recover from the blow. Let us think clearly here. Fleets cannot be improvised in these days, and it must be obvious to everyone that no reserves of food that we could possibly accumulate would hold out till we had time to build to replace casualties, even if we could keep our enemies at bay while we were doing so. At the present moment our Navy is not of such strength as to preclude the possibility of its meeting with serious reverses. Should it do so, and we lost a number of ships, sea-power would pass from this country for ever, and if every storehouse in the land was overflowing with supplies, they would not enable us to recover it. The only real security for obtaining the raw material for manufactures and food we require without interruption lies in

the possession of a Navy so numerous and so powerful that it could destroy the enemies' fleets, or drive them into their harbours and keep them there from the outset. If we could do this we need not trouble about reserves. I may go further, and say that if we had such a Navy, no other nation or coalition of nations would attempt to molest us. If we are not provided with a Navy such as I have indicated when we are next embroiled with European countries, no palliatives such as bounty-fed wheat, national granaries, or any other device of man can save us from disaster. Absolute and unassailable supremacy at sea is the charter of Great Britain's existence as a nation. Our country is simply an island fortress surrounded by a wet ditch, and is open to attack from every side. It is dependent upon its floating defences for the feeding of its forty-two million inhabitants and the maintenance of its communications with its Colonies and Dependencies. Should these floating defences be insufficient, the Colonies and Dependencies must go, and we will be subject to a fine of between five hundred and a thousand millions. I do not think I am exaggerating when I saw that if our Navy was beaten we would lose our liberty, independence, and our position as a great nation, and I think that if the case was put to the people of this country in its true aspect, they would grant with acclamation authority to the Government to double or even treble the Navy if necessary. Our national method of proceeding is to make insufficient preparation for emergencies, trusting to our resources to pull us through in the end. This style of action, however extravagant, may answer in connection with the Army, because the Navy secures breathing time to us to organise further efforts, but it will not answer where the Navy itself is concerned, as no breathing time will be allowed us. It always seems to me that in our dealings with the Navy we resemble a timid buyer at an auction who only just keeps pace with his competitors in the bidding. We watch foreign naval programmes anxiously, and we barely keep pace with them on the "Two Power" standard. They go on building (bidding), hoping in time to tire us out. If we, instead of following the auction room example, made a bold bid, and brought in a programme for doubling the Navy in from five to seven years, our opponents would come to the conclusion that we did not mean to allow ourselves to be outbid for naval supremacy, and their future programmes would cease to be of a competitive character. I repeat that the British Empire is founded on sea-power, and by sea-power alone can it be maintained. If that power is ever broken, utter and irretrievable ruin must follow. This is an obvious truth; mark it well. Look at the matter how you will, a great Navy is the only absolute protection we can depend upon to keep us from destruction; the Army, reserves of food, etc., could only retard but could not prevent our fall.

Mr. B. SANSOME: I have been very pleased with the paper; but as a practical man I fancy I can suggest an immediate remedy—a remedy, at least, that might be started at once. I understand that years ago landlords used to let their farms always stipulating that a certain quantity of land should grow corn. Now, why cannot that arrangement take place again? I think that that is the crux of the whole question. Why should not landlords be liberal in this way? Stipulate that the land growing corn should be let at a nominal minimum rent, so that in that way they (the farmers) would be able to compete with the foreigner. Then I would suggest that wheat land should be free from taxes and rates, and deficit made good from the Exchequer. You know the enormous amount of rates and taxes that are now levied upon landed property, and in that

way I believe that an immediate remedy would be obtainable, or so soon as leases fall in. I understand that in the time of Cobden we grew 22,000,000 quarters of wheat, and they grew very much less per acre than is grown now. The land is there—at least, I suppose it has not shifted since the time of Cobden—and if that is so, what earthly reason is there why the land should not grow twenty-two to twenty-four million quarters of corn to-day as in the time of Cobden? I do not see a bit of reason why it should not grow the same quantity of corn again. If we can free the burdens that are at present on our land, and our landlords would be liberal to the tenants, and *let the land growing corn* at a nominal minimum rent, you would get something like 19,000,000 quarters more of wheat.

A VOICE :—No.

Mr. B. SANSOME :—I say yes; I don't care who says no. If the landlords who own the agricultural land of the country would put their heads together, and treat their tenants well, and arrange that a certain portion of the land should be set apart for corn, I say you would have the matter upon settled basis in a year or two. I think that in a nutshell states the question. You may laugh; but I am convinced that when you go home and think it over you will say, "Well, that fellow is right."

Mr. JOHN HILL :—The supply of food in time of war is a question which must appeal with intense force to everyone in this country who has given due thought to its gravity. If the supply were to fail, Great Britain would practically cease to exist. Who, then, with a spark of patriotism in his constitution, can look upon any steps which would directly, or indirectly, benefit the producers of food in these Islands, as "class legislation"? Surely the importance of a necessary supply of food in the case of emergency, or in fact at any time, affects the consumer as much as the producer. Food stuffs cannot be obtained within these shores without the assistance of those who cultivate the land upon which corn can be grown. If the supply from whatever cause is inadequate, it stands to common-sense that in the interest of the nation at large immediate steps should be taken to remedy this fatal state of things. Why should those, who would benefit by the action taken, grudge any special advantage that would necessarily accrue to the occupiers of the land? On these grounds then, is it not a false issue to raise, that the country will not agree to anything which will specially benefit the farmers as a class, being paid out of the national treasury? It must be indeed a short-sighted policy for the consumer not to study their own interests, and assure a suitable storage of corn as a safeguard from absolute starvation under possible circumstances, for no other reason than because a portion of their fellow-countrymen may benefit even more than themselves. Those who are not thoroughly conversant with agricultural affairs, and who, perhaps, except for a few weeks' holiday spend their lives in the great commercial towns, cannot possibly form any opinion of the present disastrous position. In my own immediate neighbourhood wheat used to be the chief crop, now there is little grown, and a great quantity of the land has been sown down to grass; or, indeed, gone down of itself from the fact of its not being cultivated. As an instance, the farms I occupied from 1867 to 1897, formerly grew over 100 acres of wheat every year. This year there will be twelve acres. During my tenancy, the acreage was steadily reduced, and now wheat-growing is practically a

thing of the past. It may be said that other crops are grown in its place, but this does not concern the question. The nation wants food, it wants bread stuff, and wheat is a necessity. If our foreign supplies were from any reason either curtailed, or stopped altogether, at the present rate of things it would mean starvation in about three weeks. Wheat-growing is, in my opinion, the foundation of good farming. From force of circumstances, farmers have been compelled to leave off its cultivation to any great extent, and in like proportion, the quality of our arable land has been gradually deteriorating. Unless a sufficient quantity of farm-yard manure, which depends on straw for a foundation, can be ploughed into the land, the natural "tilth" of the soil or "humus" is wanting, and from this cause, the heavy crops of wheat, even where they are grown, are less bulky than formerly. It will be seen, if my argument is correct, that if an impetus were given to wheat-growing by enhanced prices, there would be an immediate return to agricultural prosperity, without which, all efforts to increase the "Food Supply" of Great Britain and Ireland are useless. If an additional supply of home-grown corn is required for the safety of the nation, then comes the question, How is this to be secured? First, it is necessary that a far larger acreage should be sown. Secondly, when grown and harvested, a certain quantity should be stored so that there may be always a surplus over and above the annual requirements, which could be drawn upon in case of need. The whole thing is "in a nutshell"—make it worth the doing, and it will be done. If farmers could grow corn at a profit, all the land that has gone, and is still going out of cultivation, would again be devoted to the production of wheat, and other crops of cereals. And if they were given an inducement by increased prices, by means of a bonus, to leave a certain quantity unthreshed for a given time, they most undoubtedly would make arrangements to do so. Mr. Mansell's proposal could not be said to be a plea for class legislation, for it was of national importance that they should increase the wheat-growing area of this country. The farmer was a manufacturer in every sense of the word, of the chief food supply of the nation, and he ought to be supported as such. I am quite sure that if a bonus were given to increase the supply of wheat, it would be money well spent. I do not believe in the national granaries talked of, but I think *the national granaries ought to be the farmers' stackyards*. If they could find any plan of keeping one year's supply of wheat on hand, then there would be something to depend upon in the event of a great war. At the present time, land was deteriorating all over the country—it could not be kept up with chemical manures, but required the application of real farm-yard manure, and the strength of the wheat straw put into it. In conclusion, I would point out that a more general cultivation of wheat would help the milling industry, and the home-grown offals would help the farmer. At the present time, wheat was selling for less money than they could buy offals for, and that was a great anomaly, which in all fairness for the good of the country should be altered. All interested will look forward to substantial results from the discussion at the Royal United Service Institution, which will further draw attention to the false paradise we are now living in, and show the importance of our home-grown sources of "Food Supply," which have been so perilously neglected for so long.

On the suggestion of Admiral the Hon. Sir E. R. FREMANTLE, it was agreed that the meeting should be adjourned to Thursday, 26th November.

The CHAIRMAN (the Right Hon. Lord Strathcona and Mount Royal, G.C.M.G.):—I am sure we are greatly indebted to Mr. Mansell for the important contribution he has made to the literature of the food question in time of war. The discussion we have had already seems to indicate that there are three things which, at any rate, we might venture to recommend. The first is that such assistance as is practicable should be given to reviving agriculture in this country so far as regards the production of corn and other food supplies. The second is that we should give all the help, assistance, and encouragement we possibly can to the Colonies, so that we may be in a very large measure removed from the danger of having to depend so much on foreign countries. There is one Colony alone, Canada, or rather, one portion of it, the great West, where thirty years ago there was not one bushel of corn grown that could be sent out of the country; indeed, on the contrary, much of what was required for the few people there had to be imported. During this last year and the year before in that part of the Dominion, some 40,000 farmers—and they are only on the fringe of the great wheat-growing territories—produced upwards of 120,000,000 bushels of cereals, amongst which were upwards of 50,000,000 bushels of wheat. That country alone will be capable within ten years, certainly within fifteen years, of producing all the grain, and much of the other food supplies, required for consumption in the United Kingdom. There is one other point we are all of one opinion upon—namely, that it is absolutely necessary that our Navy should be kept in an efficient condition of strength, so that there shall be no doubt about our retaining command of the sea. With such a Navy we may feel perfectly sure that no great danger will come to us. It may be said that it is out of place just now, while the Royal Commission is sitting, to bring this subject before the public; but it appears to me that we should be insistent in impressing upon the people the position in which we are now placed, and the fact that, at any time, we may be put into an even more perilous condition. The question can never, therefore be unimportant. We should, in season and out of season, keep the facts before the public.

Admiral the Hon. Sir E. R. FREMANTLE, G.C.B., C.M.G. (Rear-Admiral of the United Kingdom):—Before we go, I am sure you will all entirely agree with me that we should give a hearty vote of thanks to our noble Chairman for coming here to-day. I understand it is most probable that he will not be able to spare the time, owing to his very important duties, to attend on another occasion; but I am sure his presence here to-day shows us the interest he feels in the question, and has emphasized the importance of it. As I have not had an opportunity of speaking, I should like to say one thing. It is simply this, that whereas a gentleman speaking here the other day, said that there was too much Nelson, I think to-day that we have had a little too little Nelson. I am quite aware that it is 'a sort of King Charles' head that always comes in whenever any naval question is discussed. But what I want to say is, that anybody who studies the life of Nelson, will see how very much he was worried about the question of convoys, if not about the supply of food stuffs, at all events of sugar; and it is rather a travesty of history to state, as I think my friend Admiral Field said, that he had nothing to do except to carry out certain maritime operations. I could quote instances, but I will not detain you longer. I hope you will all agree with me in giving a very warm vote of thanks to Lord Strathcona for having presided here to-day.

The discussion was then adjourned, and resumed on Thursday 26th November. In the unavoidable absence of Lord Strathcona and Mount Royal, the Chair was taken by General Lord W. F. E. Seymour, K.C.V.O. (Lieutenant of the Tower of London).

Mr. A. MANSELL:—I am very much obliged to the Chairman for allowing me time to say a few words before the discussion commences. I have no intention to reply to the remarks which were made at the last discussion, but I simply wish to make one point clear to you, so that you can consider it in the discussion that follows. I was told the other day, or rather it was hinted I think, that I put forward no remedy; therefore, I should like to say that I have thought the matter carefully over since we met on the 19th inst.; and I would throw my heart and soul into the following: Put a duty of 4s. a quarter on foreign wheat, and 2s. on wheat coming from the Colonies. On flour I would just put 6s. and 3s., because I notice that the flour coming to this country in 1902 has deprived us of something like 700,000,000 or 800,000,000 cwt. of offal. Feeding stuffs I would allow free, because they really go to make beef and mutton to feed the people. This would give us a round sum which we could deal with by giving the British farmer some encouragement to grow wheat that can be kept in stack. You would get by this means the desired object that we all want. You would get a reserve of wheat or food stuff to the country with no cost to the ratepayer, and you would give the Colonies a preference. I do not think that there would be any increase of price, as an extra quantity grown at home after the first year would minimise that to a large extent, especially when we have got other countries coming forward prepared to grow wheat to the full extent. Lord Strathcona told us the other day that Canada in a very few years would be able to send us any quantity of wheat. Russia is doing the same. India is doing the same. As to New Zealand, we know perfectly well that if wheat were put upon a better basis New Zealand would certainly do the same. The result of all this would be that wheat-growing would become profitable at home, and we should have more wheat grown, and there would be no extra cost to anyone. We should always have a reserve, and panic and high prices would be averted in the case of a sudden outbreak of war. Our agricultural population would increase, and we should have all the advantages which would accrue from that. Our Navy would be clear to fight our foes instead of taking care of our ships bringing in merchandise. We should give the Colonies the preference which we so much desire by stimulating the growth of wheat amongst our own kith and kin. And lastly, we should have more cattle, sheep, and pigs, because we should have more offal to feed them on and more straw to deal with, and more food of every description, and that would be a reserve of food. This, I think, would be a good solution for providing foodstuffs in time of war. I thank you one and all for allowing me to make this statement before you recommence the discussion.

Admiral the Hon. Sir E. R. FREMANTLE, G.C.B., C.M.G. (Rear-Admiral of the United Kingdom):—It is not my intention to trouble you very much about the agricultural question. But I think that I am justified in saying a few words principally from the naval point of view. We all know that we have a Royal Commission sitting, and many people will say that while a Royal Commission is sitting we ought to withhold our judgment and wait till it has reported. But we all know very well that very often a Royal Commission is used for the purpose of

getting rid of a question. It gets rid of it for a certain time at all events, and possibly public opinion is no longer directly interested in that particular point when the report of the Royal Commission comes out, and the report falls rather flat and nothing is done. Therefore I think that we are justified in discussing this question. I feel very much obliged to Mr. Mansell for having brought this question before us, although it has been very fully discussed, not only in this theatre, but elsewhere previously, because I think that we do require driving power at the back of the Royal Commission, and I only hope that we shall succeed in keeping up interest in this extremely important question. It is certainly as of great moment to this country as anything else which can be discussed—even the state of the Navy. I think that we do require a very strong Navy. I am glad to see that the lecturer has put that first and foremost, and it is, after all, the most important point in this question, because it touches not only the question of food supply but the raw material, which, as our lecturer has acknowledged, is almost, if not quite, as equally important. I do not think that we have enough cruisers. I am aware that the Admiralty think that we have. We have done a great deal in the way of armoured cruisers and strong cruisers, and on this point we are extremely strong. But I go for the question of numbers. I am certain that we require numbers. The *Times* said the other day (I think yesterday) that if we commanded the seas we need not trouble ourselves about commerce protection, and we should not fear hostile cruisers, or words to that effect. I venture to think that that is an entire mistake. I am perfectly aware that a command of the sea by battle-ships is of first importance; but I would cull something from history, and very often we do not look to history sufficiently as a model for what will occur even in the present day under ordinary circumstances. Let me just mention Professor Laughton's account of the French privateersman Surcouf in his studies in Naval History. Two years after the battle of Trafalgar, in October, 1807, when we had a more complete command of the seas than we are ever likely to have again, we lost in the Bay of Bengal nineteen ships in the course of that month, most of these losses being due to a privateer, the "Revenant," commanded by Surcouf. The merchants of Calcutta, who, I believe, rather ignored the question of convoy, and thought that they ought to be protected without, complained that nineteen British ships had been captured in less than two months, and that the insurance offices paid in Calcutta £291,000 for losses in September and October, 1807; and they blamed the British admiral naturally, but I think unfairly, the admiral at that time being Sir Edward Pellew, afterwards Lord Exmouth, whom Mahan has selected as a model frigate or cruiser captain. I think that it is a most important thing that we should have numbers of cruisers, not necessarily strong cruisers or extraordinarily fast cruisers; we want fast small cruisers. We have at present a little over 160, and the world, as I pointed out before in this theatre, is very much larger now than it was. I am speaking of the naval world, of course. At the time I have referred to, China scarcely existed on the sea, and Australia was very much in the same category. Therefore, the first thing necessary is a very strong Navy, and a sufficient number of cruisers of all classes. I would like to say a few words on the necessity of doing something. We all know, as has been pointed out so ably by the lecturer, that the amount of land which grows wheat has fallen off in England; and what is of greater importance to the national interest is that we had in these realms something like two millions of persons employed in agriculture fifty years ago, and now that number has fallen to less than a million. And yet at the same time

we hear that recruits for the Army almost invariably come from the agricultural districts. Well, evidently it is of national interest that we should support the agricultural districts, and that we should endeavour to have a population in the agricultural districts, and I believe that Lord Rosebery does not deny that, because in one of his speeches he spoke strongly about the decay of agriculture. We are told that if we do anything in the direction which has been proposed by the lecturer we shall be encouraging the British farmer, and we shall be putting money into the British farmer's pocket, and possibly putting money even into his landlord's pocket; that appears to be looked upon as a sin. Now, I venture to think that if we benefit one portion of the community for the benefit of the whole community, we are not doing anything that is very wrong. I recollect that a great many years ago I happened to be present in the House of Commons when there was a debate on the Navy Estimates, hearing Mr. Conybeare speak on the subject, and at that time we fortunately had in the House of Commons a few naval officers. I rather think that my friend, Sir John Hay, was one of them; but at all events several naval officers pointed out that we had not got too large a fleet—that, in fact, it was too small. Mr. Conybeare got up in great indignation, and he said it was too monstrous for naval officers to come there and urge things for the benefit of their own profession and for themselves. He said that that was a most monstrous thing, and that if they were allowed to occupy seats in the House of Commons at all they should sit down quietly and listen to others, and not urge things for their own advantage. Now, I think that you will all agree with me that that is the *reductio ad absurdum* of that argument. We were not to do anything for the Navy because it might incidentally and undoubtedly did possibly benefit some of the speakers who were there personally. We are not now to do anything for agriculture, because it would benefit the farmers. It may benefit the labourers; we hope it will. It may benefit even the landlords. I only say that there is a great prevalent opinion that when you point to doing anything of that sort with regard to increasing the value of land or increasing the advantages which are to be gained by the farmer in growing wheat, we are doing something that is wrong. I venture to say that that is not a fair argument, and that we ought not to be deterred by arguments of that sort from advising what we think is for the benefit of the whole community. I can only say, in conclusion, that I do agree generally or in the main with the arguments of the lecturer and the proposals which he makes. We do talk very much—a certain number of people do talk—about the extraordinary difficulty in which we shall be if we raise the price of wheat 2s. a quarter. Assuming that we even raised it 5s., that Blue Book which has been so often referred to shows that in the ten years between 1866 and 1875 the average price of wheat in this country was 54s. 7d. It is now, I believe, 28s. 11d., or something like that. It is under 29s. Now, at that time, if I recollect rightly, it was just about the time when Mr. Gladstone said that everything was increasing, and that we were getting on by leaps and bounds, and the country was in a very flourishing state. If that was the case with wheat at 54s. 7d., I cannot see why the country should not be flourishing with wheat at 33s. or 34s.

Major-General Sir E. G. BARROW, K.C.B. (Military Secretary to the Government of India):—I have no desire to depreciate in any way the remarks that have been made regarding the naval aspect of this important question; but I do think it is a dangerous delusion if we imagine that the

command of the sea renders us independent in the matter of food supply. Our enemy may not have a single ship at sea, our naval supremacy may remain unchallenged; and yet our people may be on the verge of starvation. If America were our enemy, we should be at once deprived of nearly all the raw cotton we require for our mills and of half our food. Of what use then, I would ask, would be the command of the seas in connection with food supply? You may retort that war with the States is unthinkable, and that in the event of war with some other Power the United States would resist any interference with their export trade. I will grant all these postulates. I will assume that we are at war with some formidable European combination, that the United States are friendly, and that we have absolute command of the sea. Under such favourable conditions, how shall we stand? Much of our Continental business will have gone, for I may remind you that about one-fifth of our total trade is with the most probable of our potential enemies—Russia, France, and Germany. At the same time, the insurance rates on our Mediterranean trade will practically have closed Italy, Trieste, and the Levant to British shipping. Thus a large proportion of our industrial and mercantile population will have been thrown out of work, and so deprived of their means of subsistence. But this is not all. It will be quite easy for our enemy to send up the price of bread stuffs to almost any figure you like to mention by buying against us in the American market, to such prices, indeed, that many of our poor will positively be unable to buy bread. Admiral Fremantle has just told us that the prices of bread in the last half-century have not fluctuated so very greatly. I think the difference was only a few shillings, but that was during a time of peace. In war, matters would be very different. The Boer War was not a case in point. We have not been struggling with any Power that could interfere with our food supply; and I believe firmly that in the case of war with a European coalition, or even with one European Power, the price of bread stuffs would rise very much higher. Captain Stewart Murray, in a lecture delivered here two years ago, calculated on credible data that more than 30 per cent. of our people might thus be plunged into a state of abject misery. Under such penalties as these how can we carry on war for any length of time? Even a land-locked country like Servia or Switzerland, if it had capital or financial credit, could cause us infinite injury by competing with us in the market and buying up options. I venture to assert that this is no fanciful picture. The idea that the Navy alone can save us is untenable. The situation has entirely changed since the great war with France which is so often quoted by the Naval School. We were then self-supporting, and our food supply was not directly threatened. We could only be brought to our knees by the application of military force. Now, unfortunately, we have placed another weapon in the hands of our enemies, viz., the power to so manipulate the market as to deprive us of bread and of the raw commodities on which some of our chief industries depend. It is all very well to contend that we are richer than they and can outbid them; but that will not prevent prices being forced up to ruinous levels. Captain Stewart Murray and Mr. Macdonald, a Labour representative, have told us what this means, and that millions of the people will be starving. Indeed, Mr. Macdonald plainly stated that this would create a most perilous social situation. The starving masses would be in open rebellion against authority, and we might be forced to make peace on any terms to avert a revolution. What is the remedy? How can we stay so appalling a disaster? If the Navy cannot save us, what will? I do not believe in State granaries. The difficulties of distribution

would be enormous. We know how difficult it is to ration a besieged town of some twenty thousand inhabitants under strict military rule. What, then, would it be to victual a starving population of, say, ten millions free of all such control. Remember the Irish famine! Nor do I believe in resuscitating the corn industry in this country. You might, of course, make wheat-growing profitable by protecting the British farmer; but you cannot grow enough for our present population. You will not attract the peasant back to the soil. You have educated the people too highly for that, and anyhow a highly protected industry must compel higher prices; while, apart from wheat, you cannot grow cotton or sugar on these islands. So that in any case you will have to face the problem of how we are to feed in war the millions of unemployed that war will create. What, then, is the remedy? If I have correctly diagnosed the disease as almost entirely a financial one, or, in other words, one of prices, I say that we must control the market—we must be able to rule prices; and I think it is feasible to do so. The remedy I would suggest for your consideration is that we (by we I mean the Government of this country) should go into the market, and each year buy up options in advance, six months in advance, or a year in advance, as may be necessary. In fact, the Government must practically make a perpetual corner in wheat, and perhaps also in cotton. A few years ago a Chicago speculator tried to corner wheat, and failed because he had only a few million dollars at his call. But the Government of this great country is not a millionaire speculator; it is a billionaire capitalist with unlimited credit. It can easily buy up options of the whole amount required for our annual consumption. No syndicate can compete against it; nor need it spend a penny in the operation, for every bushel of wheat Government buys will be underwritten in this country by our corn dealers. We can compel them to underwrite the Government stock of corn by prohibiting the import of all other corn until the whole of the Government stock has been taken up, or by prohibitive duties. Nor need we erect granaries or construct any elaborate machinery such as that advocated by Captain Murray for the distribution of corn to the masses. The whole business, so far as the Government is concerned, will be a paper transaction, and the distribution will take place through the ordinary channels of the corn market. The only difference will be that the corn jobbers will go to the Board of Trade for their stocks instead of competing in the open corn markets of the United States and Canada. By this means, it seems to me, the Government can not only control prices in the market, but also regulate the quantities of stocks in the United Kingdom, by giving refunds or bonuses on certain quantities purchased on certain dates, and by imposing corresponding duties on later imports. In fact, the Government can make it pay the corn merchants to hold excess stocks. I do not offer this as an infallible specific. I have no doubt there are administrative and financial difficulties connected with it, and I foresee that an attempt might be made on occasion by our hypothetical enemy to break the Government contracts; but still I submit for your consideration that this suggestion does offer a possible solution, so far, at all events, as our own Colonies are concerned. It must, of course, only be regarded as one essential part of the whole scheme of protection against starvation in war. That scheme, to my mind, presents three separate aspects. We must first secure the means of controlling the markets in the manner I have indicated. I am aware that the remedy I have proposed would be useless in case of a war with America, and it may take a decade for Canada and the British Dominions to meet all our requirements; secondly, we must endeavour to encourage by means of preferential tariffs

the growth of wheat in Canada and India, and of cotton in Nigeria, the Soudan, and the West Indies, so as to render us independent of foreign and possibly hostile countries. Finally, having thus secured our supply, we must ensure its safe transit across the ocean, and for this purpose we must maintain command of the sea. These, I submit, should be the three cardinal objects of our policy. If we do not endeavour to realise them, in the hour of disaster the starving millions of this country will call the Government to account, and in such a crisis of our national history we may be compelled to make peace even at the cost of national honour.

Commander W. F. CABORNE, C.B., R.N.R. :—The lecturer certainly has no need to apologise for bringing the question of our food supply in time of war before the members of this Institution, for it is almost impossible to imagine any subject that can be of greater interest to naval and military officers, notwithstanding that the matter has already been discussed in this theatre upon various occasions. Like Sir Edmund Fremantle, I am pleased to see that Mr. Mansell, in dealing with this topic, has not lost sight of the necessity also existing for making provision for the importation of raw materials and the exportation of our manufactured goods during war, because, as I pointed out in a paper which I read here some five months ago, it is a concern of vital national importance that not only should our food supply be fully maintained during the continuance of hostilities, but also that our ordinary trade should be carried on, as far as may be practicable, in order that the great masses of the people shall be enabled to earn money wherewith to supply their daily needs. Doubtless it is true, as we have been told, that upon the outbreak of war with a naval Power the price of food will rise very materially, and will probably reach its highest cost in the earlier stages of the conflict, while the number of those unable to purchase victuals at the enhanced rate will be large. We have also heard that in this condition of affairs the Government would be compelled by the poorest, and consequently the hungriest, section of the community to make what terms they could with the enemy, refusal to do so being the signal for a revolution. However, it is almost impossible to believe that our countrymen would tamely consent to throw up the sponge without first making a determined struggle for victory. But in grave emergency much might be effected by nationalising for a time the supply of food in the country. I admit that that would be an extreme proceeding, but desperate diseases require desperate remedies, and such a step might tide over a crisis, and would probably prevent all thought of either surrender or a revolution. The lecturer seems to have largely solved the question he has propounded in principle when he says :—"Increase your home supply, and stimulate your Colonies to grow a larger area of wheat—in fact, make yourselves self-contained as much as possible." How to increase our supply of home-raised food is, of course, the principal problem. Of the different plans put forward, the one which appeals to me most is to offer a bonus to farmers on grain kept in rick for certain periods. However, I should like to ask the lecturer whether he has made any calculation as to the annual cost that would fall upon the country as the result of such a proceeding? Convoys are mentioned in the paper; but while, of course, I am not aware what methods will be adopted for protecting our oversea food supply and commerce in time of war, I think that the system of convoy will not be much resorted to. Probably strong naval bases, with an efficient patrol between them, would be more effective. I do not say this because I hold the opinion, frequently held, that our fast mail steamers, which would give

an enemy some trouble to catch at sea, would carry our food supply successfully, for it must be remembered that very fast steamships are built on fine lines, are comparatively small carriers, and burn an enormous quantity of fuel, and my own impression is that we shall be mainly dependent upon good carrying boats of moderate speed. We now come to the vexed question of contraband of war. It has long been my view that articles of food will be brought within that category, and there is precedent in support of this belief. For instance, when France was coercing China a few years ago, she declared rice to be contraband. As a good deal of the sea-borne rice trade was carried on in British vessels, we protested, and did so successfully; but the fact remains that the claim was made, and it is more than probable that if the protesting nation had been a weak one no notice would have been taken of the objection. The Declaration of Paris (to which the United States of America and Spain never subscribed) and international laws may be all very well in their way; but if our enemies are strong enough, and it suits their purpose, they will very soon sweep both declaration and laws into limbo. It would seem that the best manner in which to face the situation with regard to our food supply is to encourage our home production as much as possible, to unite ourselves as closely as may be to our Colonies and Dependencies, both through our imports of food and our general trade; to maintain an extremely powerful and efficient Navy; and to take care that our merchant vessels are manned, not by foreigners, as is at present so largely the case, nor by foreigners naturalised as British subjects at five shillings a head under the new regulations, but rather by British-born and loyal subjects of the King.

BENEDICT W. GINSBURG, M.A., LL.D. :—It is with very great diffidence that I address gentlemen of so much expert knowledge on this particular question. I am very much afraid that the one or two remarks which I was particularly anxious to make I must make simply as a humble member of the Navy League, and not as Secretary of the Statistical Society. For the Statistical Society has taken a position of masterly inactivity on one very important question which is very much before the country at the moment, and I am not in a position to speak except from a Navy League point of view. I hope that I may be pardoned for having made that little personal explanation. I venture to think that when war comes—and I hope that it may not be in our time—it will upset a great many of our preconceived notions, and put us back to a very elementary condition of things. For example, we shall not be able to depend upon any elaborate scheme of contracts or corners such as the gentleman who spoke last but one before me has evolved. I have had some little experience of the effect of corners from a commercial point of view, and I have known people who had seen that corners were being arranged, and had known that those corners must break. They laid the most beautiful plans for protecting themselves; but nevertheless, although their prophecies were true, their little hedges failed to save them, because they had come back in their contracts upon the very people whom they were guarding against, and the very people who, they knew, could not fulfil the contracts if they made them. That is one weakness of that system. Another would be that in time of war there is a large chance that contracts will not be kept if made with people outside the jurisdiction, and there is practically no means of enforcing the contracts if they are made. The same in effect may be said in regard to the points which are made about contraband of war or anything else that depends upon international law. I think that "international law" is in its very name essentially misleading. It is not

law at all. It is a custom, and it is a custom which is fixed at any particular moment by the particular object and desire of the persons who are strong enough to say that they are going to do any particular thing. As things are at present it is of no use, at all events at the beginning of a war, to depend upon the old system of convoy. As a humble student of naval history, I conceive that at the outbreak of war we should have to leave the defence of our coast and of our sea-borne commerce alone for the moment, feeling that any little straggling damage that could be done must be suffered as part of the price we had to pay for our eventual victory. We must concentrate our big battalions and drive the enemy into his own ports. For a time our commerce would have to be interrupted, and it might very well be that before our great sledge-hammer had fallen upon the enemy a certain amount of trade had been interrupted and disorganised. It is immensely important that we have food in the citadel. I cannot conceive that, except by politicians, we could ever have been allowed to arrive at the position in which we find ourselves. Even now Gibraltar contains at least twelve months' provisions. Gibraltar is important enough as the key of the Mediterranean; but this island is a great deal more important to every member of the Empire. We spend 34 millions a year on the Navy to fortify the position of this island. We spend as much or more on the Army, and yet we have provisions here which will not last us more than a very few weeks. I wonder if we read history we would believe it. It seems incredible that a nation should allow itself to get into such a position as this, and leave itself in a situation in which, in spite of our power, in spite of our wealth—nay, because of our wealth—we are likely to be pressed and brought to our knees without being defeated. One other point: I have spoken of history, and I believe that it is worth while for the moment to look back on the history of Rome. As you will remember, it has been said by historians, who, I think, were telling moral stories for schoolrooms, that it was the luxury of the rich in Rome and the luxury of the Italians generally which enabled the northern nations to come down and sweep them away. The weakness of Rome was due to the decadence of agriculture in the Italian peninsula. The Romans thought that it was an excellent thing to live on the tribute of their colonies, and they also wanted to pander to the so-called working man in Rome, and they began having the tribute sent into Rome and into the surrounding districts in corn, and they fed the working man gratuitously. The working man liked that very much. What was the result? The Italian agriculturists found that they could not compete against free imports of that sort, and they flocked into the towns too, and helped to consume the absolutely free corn which was poured into their lap. Agriculture was discouraged, and when the enemy came there was no backbone in the country to enable the citizens and the people in the surrounding neighbourhood to resist the attack. It is not necessary to go deep into that fiscal question for the moment. It may be quite possible to obtain satisfactory results in certain ways, and by a sort of hothouse cultivation we may have developed things which satisfy the people most directly interested in some industries, whilst we may be in a far worse position than we have been previously as a nation. We ought not to forget that we depend upon the integrity of the Empire, and that we cannot for the satisfaction of a certain class, be they manufacturers or be they anybody else, see the whole strength of the Empire wrecked by these extraordinary conditions into which we are now drifting. There are a good many things even besides our fiscal question that have to be looked at. We must get our labourers back to the land. We have also to think of improved dwellings for the

an enemy some trouble to catch at sea, would carry our food supply successfully, for it must be remembered that very fast steamships are built on fine lines, are comparatively small carriers, and burn an enormous quantity of fuel, and my own impression is that we shall be mainly dependent upon good carrying boats of moderate speed. We now come to the vexed question of contraband of war. It has long been my view that articles of food will be brought within that category, and there is precedent in support of this belief. For instance, when France was coercing China a few years ago, she declared rice to be contraband. As a good deal of the sea-borne rice trade was carried on in British vessels, we protested, and did so successfully; but the fact remains that the claim was made, and it is more than probable that if the protesting nation had been a weak one no notice would have been taken of the objection. The Declaration of Paris (to which the United States of America and Spain never subscribed) and international laws may be all very well in their way; but if our enemies are strong enough, and it suits their purpose, they will very soon sweep both declaration and laws into limbo. It would seem that the best manner in which to face the situation with regard to our food supply is to encourage our home production as much as possible, to unite ourselves as closely as may be to our Colonies and Dependencies, both through our imports of food and our general trade; to maintain an extremely powerful and efficient Navy; and to take care that our merchant vessels are manned, not by foreigners, as is at present so largely the case, nor by foreigners naturalised as British subjects at five shillings a head under the new regulations, but rather by British-born and loyal subjects of the King.

BENEDICT W. GINSBURG, M.A., LL.D. :—It is with very great diffidence that I address gentlemen of so much expert knowledge on this particular question. I am very much afraid that the one or two remarks which I was particularly anxious to make I must make simply as a humble member of the Navy League, and not as Secretary of the Statistical Society. For the Statistical Society has taken a position of masterly inactivity on one very important question which is very much before the country at the moment, and I am not in a position to speak except from a Navy League point of view. I hope that I may be pardoned for having made that little personal explanation. I venture to think that when war comes—and I hope that it may not be in our time—it will upset a great many of our preconceived notions, and put us back to a very elementary condition of things. For example, we shall not be able to depend upon any elaborate scheme of contracts or corners such as the gentleman who spoke last but one before me has evolved. I have had some little experience of the effect of corners from a commercial point of view, and I have known people who had seen that corners were being arranged, and had known that those corners must break. They laid the most beautiful plans for protecting themselves; but nevertheless, although their prophecies were true, their little hedges failed to save them, because they had come back in their contracts upon the very people whom they were guarding against, and the very people who, they knew, could not fulfil the contracts if they made them. That is one weakness of that system. Another would be that in time of war there is a large chance that contracts will not be kept if made with people outside the jurisdiction, and there is practically no means of enforcing the contracts if they are made. The same in effect may be said in regard to the points which are made about contraband of war or anything else that depends upon international law. I think that "international law" is in its very name essentially misleading. It is not

law at all. It is a custom, and it is a custom which is fixed at any particular moment by the particular object and desire of the persons who are strong enough to say that they are going to do any particular thing. As things are at present it is of no use, at all events at the beginning of a war, to depend upon the old system of convoy. As a humble student of naval history, I conceive that at the outbreak of war we should have to leave the defence of our coast and of our sea-borne commerce alone for the moment, feeling that any little straggling damage that could be done must be suffered as part of the price we had to pay for our eventual victory. We must concentrate our big battalions and drive the enemy into his own ports. For a time our commerce would have to be interrupted, and it might very well be that before our great sledge-hammer had fallen upon the enemy a certain amount of trade had been interrupted and disorganised. It is immensely important that we have food in the citadel. I cannot conceive that, except by politicians, we could ever have been allowed to arrive at the position in which we find ourselves. Even now Gibraltar contains at least twelve months' provisions. Gibraltar is important enough as the key of the Mediterranean; but this island is a great deal more important to every member of the Empire. We spend 34 millions a year on the Navy to fortify the position of this island. We spend as much or more on the Army, and yet we have provisions here which will not last us more than a very few weeks. I wonder if we read history we would believe it. It seems incredible that a nation should allow itself to get into such a position as this, and leave itself in a situation in which, in spite of our power, in spite of our wealth—nay, because of our wealth—we are likely to be pressed and brought to our knees without being defeated. One other point: I have spoken of history, and I believe that it is worth while for the moment to look back on the history of Rome. As you will remember, it has been said by historians, who, I think, were telling moral stories for schoolrooms, that it was the luxury of the rich in Rome and the luxury of the Italians generally which enabled the northern nations to come down and sweep them away. The weakness of Rome was due to the decadence of agriculture in the Italian peninsula. The Romans thought that it was an excellent thing to live on the tribute of their colonies, and they also wanted to pander to the so-called working man in Rome, and they began having the tribute sent into Rome and into the surrounding districts in corn, and they fed the working man gratuitously. The working man liked that very much. What was the result? The Italian agriculturists found that they could not compete against free imports of that sort, and they flocked into the towns too, and helped to consume the absolutely free corn which was poured into their lap. Agriculture was discouraged, and when the enemy came there was no backbone in the country to enable the citizens and the people in the surrounding neighbourhood to resist the attack. It is not necessary to go deep into that fiscal question for the moment. It may be quite possible to obtain satisfactory results in certain ways, and by a sort of hothouse cultivation we may have developed things which satisfy the people most directly interested in some industries, whilst we may be in a far worse position than we have been previously as a nation. We ought not to forget that we depend upon the integrity of the Empire, and that we cannot for the satisfaction of a certain class, be they manufacturers or be they anybody else, see the whole strength of the Empire wrecked by these extraordinary conditions into which we are now drifting. There are a good many things even besides our fiscal question that have to be looked at. We must get our labourers back to the land. We have also to think of improved dwellings for the

labourers. We have to remember that the labourers are human beings, and that they have some interests besides actual work. By brightening their homes, by giving them village clubs, and by various matters of that sort, and also by promoting the re-establishment of the old class of yeomen which has now become extinct, by trying in some way to draw people back to the land, so that there is a reserve in the country both of English men and of English food, we shall do very much more than is possible by making elaborate arrangements either by international law or by contracts which may be entered into by those whose desire and interest it may be to see that they are broken when they find that we are depending upon them.

T. MILLER MAGUIRE, LL.D., Barrister-at-Law :—I should have preferred that some of the naval or military authorities had spoken after a civilian like my friend Dr. Ginsburg; but, as the gallant Admiral Fremantle said, perhaps a certain amount of driving power on the part of a civilian may be necessary as well as the experience and practical skill of soldiers and sailors. I should like, however, to ask the gallant Admiral a few questions. I want to ask whether this nation now, in the year 1903, is better fitted to cope with an alliance of two or three Powers than it was in the year 1781, when we lost the American Colonies. And again, I would ask him to answer whether it is better able so to do than it was in the year 1796, when we had to fight France and Spain and Holland, or in 1804 and 1805. Does he think that we are better able now in every respect than we were then?

Admiral the Hon. Sir E. R. FREMANTLE :—Yes.

T. MILLER MAGUIRE, Esq., M.A., LL.D. :—Well, I am very glad indeed to hear that. Why spoil all our preparation for lack of some further precautions? With the question of food supply in time of war politics have absolutely nothing to do. Fiscalitis has no more to do with it than appendicitis or phlebitis, or any other disease of the mind or body—nothing whatever; and I protest that the introduction of politics and Joseph's granary and similar references is to warp our judgment by side issues. Whether we have protection or "free trade" or "fair trade," or any form of trade; as long as we have forty millions of people here who get three-quarters of their food supply from foreign countries and have not a reserve for three months at home we are in an equally serious position in the event of an outbreak of war whatever the fiscal policy may be. Therefore, in discussing how we are to prevent ourselves, either from unreasonable panic or reasonable apprehension or utter starvation in the event of sudden war, or even long-prepared war, to be talking party politics, appears to me to be almost an insult to one's intelligence. Our party leaders mislead, and often betray us as to our Imperial interests and national security. The problem before us is simple. Can we secure ourselves against starvation or panic in the event of cruisers interfering with our commerce or food supply? If so, how? Is not that the issue? That issue can be considered *a priori*, and from the point of view of history. My learned friend has given us warnings based on the history of the Roman Empire. Now from the point of view of the general present international situation, does it make the least difference whether, having regard to the question at issue, we get our food supply from the Argentine Republic, or from the United States or Canada? We must get it from over the sea, and if we lose the command of the sea for a short

period, does it make the least difference, having regard to this question, from what distant oversea ports we get beef and corn? Of course, we are all of us in favour of a great Imperial policy, not of finance only, but patriotic and strategic ties, linking together all the component parts of our Empire. Most of these component parts are self-supporting in time of war. The United Kingdom cannot feed itself in time of peace. Roman history, Spanish history, Dutch history prove conclusively that if you depend on colonies oversea hundreds of miles away, or if you depend on foreign States, it is all the same. You will have the people starving if the food supply is interrupted by hostile fleets, unless you have a reserve of food to tide over the crisis. I might have been shot myself, although I was doing nothing, in Milan in 1898. Why did the riots take place? Because there happened to be a war between Spain and the United States, and bread was in consequence dear in Italy. And if we were at war with France or the United States, and there were plenty of cruisers of the other Power in the Atlantic, I leave it to the gallant Admiral or to anyone, or to the opener to notice in his reply, how would the people of this country avoid either panic or starvation? And if there would be the least danger of either panic or starvation, is it not flying in the face of the experience of all mankind to go on drifting to such a result without any reserve supply or any precaution or any wise policy of insurance. I think that we are justified in coming here and considering the matter; and if we feel as the gallant Admiral and other authorities feel, the sooner we put our country into some different condition, in my humble opinion, the better. My learned friend referred to Rome. The Roman people deliberately elected to get their food supply from Egypt—of course, the most fertile part of the world then—and from the North of Africa generally. The Goths came and interposed. And again, the people of Constantinople depended on the North of Africa. Most tremendous perils beset the Roman Empire because of their carelessness in not having a supply in Italy, and depending on foreign States. I am heartily in favour of this position—that the people of England be taught that they cannot go on for ever in a kind of blind security. Captain A. Mahan said that we cannot expect the least guidance from the present system of party politics. That is one of his last words of his celebrated warning in the *National Review*. He says that the people of England cannot trust their party leaders: they have got no guidance from them with regard to either food or food supply or commerce. No light can come from Westminster Hall or Downing Street; there Cimmerian darkness reigns. Captain Mahan, our wisest foreign friend, says that the originating or driving force must be outside. As for our M.P.'s, they evidently have no driving force of any kind. They are lymphatic. We are bound to ask for something to be done. Are we asking too soon? When a naval war begins it will be too late. We are in a supposed state of invulnerability and of security. Well, the French thought themselves so in 1870. The general opinion in England was that the French would be in Berlin in the winter of 1870; but they were not. And if the commissariat of Metz and other places had been properly looked after, the Prussians would not have been so soon in Metz; and if there had been four months' more food in Paris, in all probability the Germans would have raised the siege and gone away. Thus for want of some wise expense betimes their war indemnity was doubled, and they lost Alsace and Lorraine. *Absit omen.*

Admiral the Rt. Hon. Sir JOHN C. DALRYMPLE-HAY, Bart., G.C.B., D.C.L., F.R.S.:—I wish for a very few minutes to touch upon one point

which has only been alluded to by my gallant friend Captain Caborne, and that is with respect to the fact of how the corn which has been grown in Colonies or foreign parts is to arrive here. It is presumed that the Navy is sufficient to protect the ocean, and that the ocean is ours. It is also presumed that there is no possibility of preventing its coming except the fact that there is nothing to bring it. Now, of course, it will be said at once that our merchant navy is there, and that the merchant navy will accompany the corn to this country. What is the condition of the merchant navy now? And what would be the condition of the merchant navy—that is the bridge or ferry-boat—which is to bring us our corn if war were to break out? At the present moment, we have about 11,000 sailing merchant-ships, and 210,000 men are required for the whole mercantile marine. Of the 210,000 men required to man them, there are 37,000 Lascars (British subjects) in use for the corn-carrying ships. They are not allowed to go to Australia, and of course they are not fit for this climate in conveying corn from India. There are 23,000 Naval Reserve men, no doubt, but 11,000 of those are fishermen and other persons in this country. There are 12,000, therefore, to be deducted, with the 37,000, from the 210,000. That leaves about 160,000 men; and by the Board of Trade returns 49,700 are absolute foreigners. Therefore you have not 102,000 seamen to man the merchant fleets. There is no Naval Reserve available, and not enough seamen of this country. We are obliged to employ 49,000 foreigners to man our merchant-ships now. Many of these men would be belonging either to neutral Powers or to hostile Powers, and could not be calculated upon for service in our ships. The result, therefore, is that our merchant navy would be totally unmanned, and we have no British seamen to man that merchant navy with. I have, therefore, only to suggest that in this most interesting paper, which looks to the fact of the supply of food to this country, we should urge the necessity not only of training the 10,000 boys for two years, of which 5,000 are entered each year for the Navy, but that of our boys who, having passed the sixth standard, now go to technical classes, 20,000 additional should be trained for the merchant navy and for general service at sea. It is quite impossible, unless you take a boy at thirteen or fourteen, to make a sailor of him. We have tried it in the Navy, and we know that by entering boys at thirteen we have 80,000 of the finest seamen in the world trained from boyhood up; whereas the novices entered at eighteen were a failure. You have nothing of the kind in the merchant navy except the 11,000 trained seamen who are there, and who would be required in the Navy in time of war. Unless therefore, the unemployed and Hooligan classes are to go on being swelled by our boys, it is necessary that boys should not only be trained for the Navy, but should be trained for the whole sea service of the country in sufficient number. There is no difficulty in getting boys to go. I believe that parents will be delighted that the boys should be trained. All that is required is that it should be included in the technical training of our youths, and that a sufficient number of training vessels at the ports should draw not only from the inland districts of the country but from the sea shore those boys who are willing to be trained. That would make the finest seamen in the world, and would man our merchant navy in a manner which would enable it to be an admirable training for the Navy. This would ensure a marine capable of supplying food for this country, and our ships would be manned with men who would be British subjects, and fit for the service in which they are employed.

Captain G. F. KING HALL, R.N.:—I shall only make a very few remarks, but there are one or two points which struck me in listening to the very able lecture which we had last week and the remarks which have been made to-day upon it. But before making any observations I may say with regard to Sir John Hay's remarks, I think that the reason why our merchant service is not better manned will be found in the remarks made by Commander Dawson in the discussion that took place last June on Commander Caborne's paper. I was very much struck with it, and there is a great deal of truth in those remarks. With regard to the paper itself, I gather that the lecturer, Mr. Mansell, looks upon England as a great workshop requiring to be provisioned, which is evidently the case. And there is no doubt that if we want to provision ourselves the labourers must be brought back to the land. How that is to be done is a matter of opinion. I cannot help thinking that one of the speakers, the Secretary of the Statistical Society, hit the nail on the head when he said that it has nothing to do with the fiscal policy; but there are many other questions—legislative questions—which require to be put into motion before we get the population back to the land. There is another observation which I wish to make from a naval officer's point of view. Of course, I admit the necessity for provisioning ourselves, and that it is most valuable that there should be a closer connection with the Colonies. I am sure that we shall all be much pleased if this can be carried out; but unless we are at war with America I think there is great exaggeration in the statements made concerning corners in food and of food going up to famine prices, for as long as we were not at war with the United States (which would be a fratricidal struggle) we could get food from there. I cannot help thinking that two-thirds of our wheat supply would still be provided by Canada and the United States as at present. I do not see how that food supply could be touched. If we were at war with a Continental Power, and they declared that food was contraband of war, we should deny that it was, and I am perfectly certain that the Americans would support us; and besides their moral support we should have the practical support of a very strong Navy. We refused to allow rice to be considered as contraband of war during the Franco-Chinese war, which ceased very soon. So the question never came to an issue. Nevertheless, of course, if the struggle took place with the United States it would be certainly a most serious question, because not only will their supply be stopped, but we should have a very strong Power on the flank of any supplies which came from Canada, and it would be very difficult to protect them. I quite agree with the lecturer, that everything should be done for increasing the supply of food in our native land, and upon this point we have received much information from the lecture and discussion upon it; and it is one which ought to be gravely considered how it is to be brought about.

MR. GEORGE QUICK, Fleet Engineer, R.N. (retired):—I venture to speak on this question, because I have given it a great deal of consideration, and I yield to no man in the attention that I have given it—a rather "large order." In 1862 I was in the Shanghai River, and I saw the United States flag flying on numerous vessels there. Then the "Alabama" broke loose, if you remember, and shortly afterwards that ensign almost disappeared from the China seas. It was a great object-lesson to me, because the Northern States had the command of the sea as against the Southern

States. We do not want to go back to very ancient times for our lessons. The Stars and Stripes almost disappeared, and we know how the commerce of America went down after that period. Commerce is a very very ticklish thing. The sea is treacherous. No purely maritime Power has had a long period of power. The land is reliable if it is properly taken care of. We have had a magnificent land in our keeping. Cobden said himself in 1844 that this land of ours could produce food for three times the population, which was then over twenty-five millions. At that time there was no steam cultivation. To-day we have steam and electricity, with which, if we had only a little common sense, we could cultivate our land and grow food for over seventy millions of people, and produce also a strong and happy population.¹ Look at Ireland as it was sixty years ago. Look at it to-day. We have throttled agriculture by Free Trade in food, and we are paying for it every day in the decaying physique of our people. You talk of want of men in the mercantile marine. Go down to the agricultural counties and you will find that the farmers complain of shortness of men and boys for cultivating the fields. Go into other places in Great Britain and you will find a shortage of men everywhere; and yet you have a large number of unemployed. These are curious things to consider; and when you study them in Liverpool and Manchester, and Leeds and Hull, and in little fishing villages, and down in the agricultural districts of Gloucestershire and Warwickshire and Wales and the eastern counties you begin to find that there is something radically wrong. It is because we have neglected our good mother, the land, and have reduced our production of food, and the consequence is that we produce fewer working men—men who are capable of working hard, because we have lost large numbers of men in the prime of life by emigration, and we have been left with an excessively large population of comparatively speaking feeble and invalid people. Consequently in this land we have a lower proportion of strong working people than there is in other countries. Furthermore, there are over one million females in excess of males in this country. That is a serious consideration. Then we preserve cripples and invalids, and we hang on to the old people, and these have to be supported, and they produce nothing. I will not go further into that question, because it is rather too big, but it has a bearing on the quantity of food required in this country by non-producers. If you want to regenerate this land (the perpetual source of real wealth, health, and life) and keep your hold in the world you must go back to the land and work it, and that can only be brought about by a sliding scale on imported food in order to make the production of home-grown food profitable, as our lecturer told us last week. This is the only solution. But do not let us go on with any nonsense of bounties here or encouragement there. The one plain straightforward fact is that you must protect your agricultural produce, and then you will get your people back to the land, and in addition to that you will get a large revenue from that protection, which revenue can be and will be used for the benefit of the working classes of these islands. We have spent 180 millions a year in drink and 30 millions in tobacco, and I do not know how many millions a year in flowers and feathers and frills and jewellery. Surely we can afford to pay taxes on

¹ The late Mr. Mechi, the great authority on high farming, asserted that we could grow four hundred and eighty million pounds' worth more food every year in these islands. Many other authorities who are acquainted with agriculture in foreign lands hold similar opinions.

foreign imports if the money arising therefrom be devoted to the service of the people. There*are our hospitals always begging. We could supply them out of the funds arising from the taxes on food. We could train our boys and teach our girls the duties of life, and so form a strong healthy, and vigorous population. But it will take years to re-establish thriving agriculture in these lands even under the most favourable conditions. The only remedy, therefore, is to get your corn into your own cupboards. You cannot grow it or buy it all at once. You must accumulate it a bit at a time. How are you going to do it? Well, I have given more than twenty years' consideration to the subject, and I say that the municipal granary is the only plan to keep away absolute starvation from the people or their rebellion in case of a big war. I have attended meetings amongst people who talked on politics, and they say plainly that if there should be an invasion or a difficulty as to food, they will compel the Government to surrender to the enemy, and have peace at any price in preference to scarcity of food, or else we shall be made to understand the use of dynamite and petroleum. We had a very good example three thousand years ago, when that far-seeing gentleman, the Prime Minister of Egypt, laid in a stock of corn. He did not do it all at once; he was doing it during seven years, if you remember; and I am as convinced as I am of my own existence that the only system for us at the present time is to start food reserve stores. But should it be done by Government or by local enterprise? The town of Southampton wants food, Rugby wants food, Bedford wants food. It is the duty of these towns and of all other large towns to look after their own food supplies, and they can do it. It only requires the exertion of the local authorities, backed up by subsidies derived from imported food, and you have the means by which local bodies can build their own granaries for three months or for six months—wheat and oats; and then we shall get a really good supply to fall back upon, we shall not be in a state of panic about food. A mere trifle of thirty millions sterling (two months' drink bill) would give us splendid granaries filled with wheat for all the people for four months' supply. And, further, if necessary, the price of bread should be regulated straight off. It may savour somewhat of Socialism, but when you come to look at it, it is no more Socialism to supply bread to the people from municipal bakeries than it is Socialism to supply gas or water by municipalities. The great cost of bread at the present time is due to the cost of delivery. You often see five bakers' carts delivering bread in one street, where one cart would do as well. This is an enormous waste of time, money, and labour. At present the price of a 4-lb. loaf varies from 4d. in Liverpool and Manchester, to 6d. in other towns. In London it has varied from 4½d. to 6½d. this year. Last year it was 3½d., although the price of wheat and flower was the same or higher than now. The price of whole-meal bread is 12½ per cent. higher than best white bread. Is it surprising that our working people do not buy and eat whole-meal bread? I assert that the bread supply should be taken over by the municipal authorities as quickly as possible. I do not think that it could be done all at once. County council or municipal granaries should be established by means of loans guaranteed by the Imperial Government. The loans could be raised by 2½ per cent. bonds issued at par, by means which I indicated in a letter dated the 30th June, 1898 or 1899, published in the *Morning Post*. Money then was exceedingly cheap. I showed how we may easily secure twenty million or thirty million quarters of corn in this country. What

I should like this country to do is to stand on its own legs, self-supporting, and not dependent upon anybody. I must confess that so far as I can see we are to a large extent under the thumb of the United States, and can be squeezed at any time, because the power that can send us food can also have power to stop it. I speak for the poorest classes of this country in order that they may be saved from starvation in time of war. I speak for the working classes, the manufacturers, the cotton spinners, the wharf labourers, the poor sempstresses, the poor people of Scotland and of Ireland, and I see that our salvation can come only be taxation on food imported from abroad, as indicated by Mr. Chamberlain in his first speeches. The great advantage of municipal bakeries is well known on the Continent. In Catania the municipal bakeries supply 150,000 people with bread of superior quality at one penny per kilo below the prices formerly charged by private bakers. That is nearly equal to a reduction of two-pence on the 4-lb. loaf. There is an annual profit of £2,000 derived from these municipal bakeries. Protection would bring the big and cheap loaf and the money to buy it.

MR. CHARLES FORWARD :—As one of the few civilians who have taken part in this discussion, I may express satisfaction in finding that so many military and naval experts are interesting themselves in what, I think, is as important a question, in the event of war, as anything that may occur at the actual fighting point. It seems to me, however, that this debate may turn out to be of an academic character in so far as it may influence the people at large. I find that the lecturer intimates in his summing-up that one of his objects is to bring this matter before the public notice, and I feel strongly that the facts should be put before the public at the earliest possible moment to a yet greater extent than has yet been done. It has struck me when the Navy League was mentioned during the debate, that if a similar League could be organised to educate the people on the subject of food supply it would be one of the most important steps we could take in the solution of this question. I am reminded that there is a "Free Food League," but I do not think that the Free Food League is exactly what is wanted. What is needed is a League which will bring before the public the actual dangers surrounding us at the present time. The ordinary civilian knows little or nothing about the production or supply of food, and, if possible, he cares less. To him his food "droppeth like the gentle rain from heaven." As long as he gets it, he takes no interest in how or from where the supply comes. If we have not yet suffered, we shall almost certainly suffer from our success. We have for a generation or two been in a state of comfortable peace—never threatened with the suspension of our food supply. And, therefore, as H.R.H. the Prince of Wales suggested with regard to commercial matters, I feel the masses want waking up on the subject. I think that a campaign should be undertaken throughout the country. I believe there is a feeling among the more intelligent of the working classes that it would be a good thing to get back to the land again, and I am not sure that if the way were made plain for them they would not avail themselves of the opportunity of getting away from the less desirable conditions of town life. The apathy of the public is the most serious point, and the need of enlightenment is an urgent one. It struck me, when, in connection with the Navy League, some time back, there were some cinematograph pictures illustrative of life in the Navy. We might do something of the same kind with regard to agricultural life. Could not we show on one side the evils of

town life, and on the other the events of country life, and combine with this a few simple facts and figures such as the masses could understand? Could not something of this kind be brought before the masses of the people? I am not at all in favour, and I do not think the more enlightened of the civilian population will be in favour, of the suggestion that we should place any dependence on the possible assistance that other countries would give us, or upon their forbearance in time of trouble. I prefer to be absolutely independent. We ought to take a lesson from the Boer war. We found on that occasion, when our whole attention was absorbed on the war, that every nation seemed to think that it could insult us with impunity. Some nations, from whom we might have expected a different attitude—the Swiss and the Belgians—were amongst the worst. Is it reasonable to suppose that they will put themselves out of their way to help us in the future? We know too well how jealous they are of our position. Nor am I sanguine as to the probable attitude of the great body of the people of the United States. The American nation is made up of all varieties of nations. In New York the Irish predominate. Do you think that Tammany Hall is going to put itself out of the way to influence public opinion in favour of England? I say we must be absolutely independent. If we can get the good-will and assistance of other nations, let us get it by all means, but we must be prepared to do without it if necessary. Therefore I do urge that in the event of a campaign such as I have suggested, or in the course of the inquiry before the Royal Commission, the idea that other nations would assist us in time of need should be discounted altogether. Mr. Macdonald, who, I think, represents the Trades Council, very candidly warned us what would take place in a great city like London in the event of a panic. In the paper that has been read we have been told that about four times the amount of butcher's meat is imported per head than was imported some time ago. The masses of the people are living more luxuriously, and they would feel the pinch very much sooner, and would *think* that they were being starved long before the starvation point was reached. It would be a very serious thing in the present state of party politics, and with the little dependence that could be placed upon our party leaders, were anything of that kind to take place in London. The enemy would strike at the heart of the Empire through its stomach, and the Metropolis would be as much in peril as if the enemy were to land a large body of men upon our shores. The hopes of the Boers were centred on the possibility of a change in the political situation in London, and English politicians and foreign critics who encouraged the Boers in that kind of view, and pointed out to them that in the event of an election the position would change, were, I believe, responsible for the loss of a large number of lives on both sides owing to a continuation of the war based on these delusive hopes. We ought to face these facts, and not shut our eyes. We have had them before us to-day, and I do hope that one outcome of this meeting will be an attempt to arouse public opinion upon this vital question.

Colonel the Earl of WEMYSS, A.D.C. (Late London Scottish Rifle Volunteers):—I have been asked by the Chairman to say a few words, but I did not come here to speak: I came to listen as far as my deafness would allow me, and I am sorry to say that I only heard what was said in my immediate neighbourhood. Admiral Fremantle, who is no longer here, rather threw cold water upon the Royal Commission. I think that we ought to rejoice that there is a Commission on this subject. A Com-

mission is either good or bad according to its constitution. If it is fairly constituted with independent men and not party partisans, it is the best way of getting a solution upon questions upon which there is great difference of opinion. Who is there that does not feel that it would be an invaluable aid at the present time if there were a Commission to tell us the truth upon this fiscal question? What is said by one party one minute is denied by the other party as soon as they have read it; and from the same figures totally different conclusions are drawn. I myself very much wish that we should have from the Board of Trade their unbiassed, unpartisan, unpolitical view upon the fiscal question from the statistics which they have collected. It so happens that there are Blue Books from the Board of Trade which I casually got acquainted with a year and a-half ago. They give you up to 1898 the whole of the opinions of the Consuls (121 in number) upon the trade of the United Kingdom, and from these the Board of Trade, through Sir Alfred Bateman, the head of the Commercial Department, has drawn an independent and conclusive opinion. There is also another Blue Book which brings the comparative state of our trade down to 1902. There, too, Sir Alfred Bateman draws his conclusions; but what were the conclusions thus drawn by the Board of Trade? There was no question about fiscal preference or retaliation, but simply this: That if our trade has fallen off in any particular, it is mainly for want of method on the part of the people who ought to push that trade, but do not push it. For instance, they go to a country without knowing the language, and the man makes up for that—how? By sending out lots of printed circulars in English. They do not consider whether the things are wanted, but he dumps down a lot of our goods whether they are wanted or not. The Germans proceed on totally different grounds. They go and feel their way and take small orders, and they even send bad cheap things to pave the way for good things. Now we have got another large Blue Book upon the fiscal question which gives statistics to any extent but no opinion upon them on the part of the Board of Trade. I should very much like to see attached to these figures the independent expert opinion of the Board of Trade. Even as I am anxious to hear an opinion upon this question of our food in time of war from an unprejudiced, unbiassed, intelligent Commission. I think that the paper which has been read by Mr. Mansell will be very valuable, and that this discussion will also be very valuable, and I hope that the paper and the discussion will be printed and sent to every member of the Commission to help it in coming to a sound conclusion. As regards the paper itself, I only wish to point out two things in it. One is that Mr. Mansell has referred to other cereals than wheat as human food. He has mentioned oats. Well, we always hear of nothing but white bread. I come from the north. I have been bred in a porridge-eating country. I am sorry to say that it is no longer a porridge-eating country. Not only was porridge eaten in my country by all the labouring classes, but they had what was called pease bannocks, or cakes made from pease, and up to 1851 tea was a thing almost unknown. Anyhow, we are now promised by Mr. Chamberlain, as a set-off against dearer bread, that there shall be cheap tea. He could not give a worse gift. It is ruining the race and filling the mad-houses. If we would promise them oats it would be more to the purpose. In my deer-stalking days the gillies never saw meat or wheaten bread, and they and the people thrived on porridge and pease bannocks, and we had a stalwart race. Indeed, I have heard it said in Scotland that there has not been a real hard day's work done by

labouring men since the days that they had pease bannocks, for it is a fact that pease and beans are more nutritious than beef. There is 16 per cent. more nutritious fibre-making food in pease and beans than there is in beef; and we read in Froissart that in the old days they laid in pease and beans as the best sustenance whereon to stand a siege. I therefore rejoice that another cereal, viz., oats, has been brought into consideration by Mr. Mansell. But there is one thing in which I venture to disagree with him—as to the possibility of it. He referred in the paper to the possibility of our corn stacks and of our standing corn being not used by ourselves but burned by an invading army. All that I can say about that is that the possibility of such a thing ought not to enter the consideration of anyone if you are properly governed, and our defensive means are properly administered. Such a passage, therefore, ought to be cut out, and if not, and there is justification for it, cut out every Government until you find one that will do what is needed with regard to home defence.

Mr. A. MANSELL, in reply, said:—In the first place, I should like to thank the speakers one and all for the very kind reception they have given to the lecture. I will deal seriatim with the several gentlemen who have spoken. I believe that the first speaker on the first day was Admiral Field. He alluded to the fact that if a naval officer got up and spoke on the question of food supply in time of war, he was always met by the statement that he was speaking for the aggrandisement of the Navy. Well, farmers and others connected with agriculture labour under the same disadvantage. If they get up and say a word about these foodstuffs, which would incidentally help the farmer and his landowner, it is said that they are doing it for the purpose of their own fortunes. People do not believe that we can be patriotic, or that the naval officer can be patriotic. I venture to think that there is no more patriotic man in this country than the naval officer or the man connected with the land. Admiral Field also alluded to the fact that I said that it was no part of the duty or the ordinary routine of the officers of the Army and the Navy to consider the food supply. He thought that I cast a slur upon them by saying that. I meant nothing of the sort. All I meant was that it was no part of their official work; but I am quite certain that they must think seriously about it from time to time, because they probably know more about it than other people. Some figures which Admiral Field gave us emphasised, I think, the importance of this question. He told you that when the Crimean war was on we had only 28 million people in this country, and that our annual supply was 16 million quarters of wheat at home. He also reminded you that now we have 42 million people, and that our home supply is only 5 million quarters. Those are really more striking figures than any in the paper. Then Captain Murray deplored the fact that I had not gone into the question of how this food, which we all hoped to have, would be distributed amongst the people. I cannot help thinking, with all due deference to Captain Murray, that he has somewhat put the cart before the horse. The thing is to get your food; and I think that it will be an easy matter to distribute it if you have got it. He also complained that I had not kept the working man in sight in this paper. I have absolutely kept the working man in sight, because it matters little to the rich man whether he pays a high price for his bread or not, but it matters very considerably to the working man. Then

Admiral Sir Nowell Salmon, I see, advocated national granaries. I have stated my objections to those, and since I came to this room Dr. Miller Maguire has very kindly placed in my hands a book written by Colonel Daniel some two or three years ago on this very point, which, if you will allow me, I will quote:—"Assuming, therefore, that those who advocate having four to six months' supply of wheat for the country are right, the next question is: How is the supply to be kept? Most people say in granaries, but granaries have serious draw-backs. First of all they are costly to build and keep in repair. Then, unless the wheat is in dry, good condition when put away, the whole stock might be spoilt. Care-takers must be kept and well paid to look after the granaries, or the wheat might disappear, and there must be considerable loss from insects, rats, and other causes. Moreover, as the wheat would have to be periodically sold and replaced, there might be losses on these transactions. So, although granaries are a very old-established method of keeping supplies of corn in hand, they entail considerable expense." I entirely agree with that, especially after the very open way in which Mr. Macdonald told us that if we were short of food the mob would immediately go to these granaries to demand food, and possibly get it and waste half of it. You could say that to my mind this is not the means of keeping up the supply which I should recommend. I would ask you again how would you refill these granaries in case of prolonged war? You could not do it. You could have a little more wheat from year to year if you increased your home supply. To my mind, if the Government were to take up this question of the granaries and buying the wheat, and selling the wheat, there would be any amount of red-tapism. The markets would be upset as I have mentioned in the paper, and probably when we wanted the wheat we should not get it. The same speaker, Admiral Sir Nowell Salmon, alluded to the fact that a bonus was a very bad thing to have, because it might be misused. Well, to my mind, difficulties are made to be overcome. He also stated that the first duty of the Navy would not be to convoy ships, but to go out and fight the enemy. Well, that might last for two or three weeks, and supposing that the Navy was powerful enough to beat the foe entirely and very rapidly, we should possibly have a good supply of food. But suppose, on the other hand, that the Navy was only just strong enough to cope with the enemy and not to thoroughly smash it up, the chances are that we should get very little food in, and possibly none. It is possible that the Navy might be strong enough for a certain time to hold their own, and even until the finish; but even then all the food would have to come in at high freights and at high insurances, and panic would be the result, and high prices would also result. Mr. Macdonald went on to say that he would not support a bonus because it would mean an increased price of bread. But at the same time he made this statement: "Woe betide the Government who kept no reserve of food in case of war." It appears to me that he wants to be absolutely assured of a food supply, and yet he is not willing to do anything to increase our home production. It appears to me that on the one hand he wants everything, and he does not want to give anything. Major-General Sir George French rather regretted that I made the statement that we were sending our best country-bred folk to the Colonies and elsewhere. Well, I meant to say this: We do deplore the depopulation of the country districts; but at the same time, if they must go anywhere send them to the Colonies by all means. But I do deplore the fact that in the country districts we are losing those young men

who should grow up as farm labourers and stop at home to help till the land. Admiral Close thought it absolutely impossible that our ports could ever be blockaded. But the unexpected very often happens. You must increase your food supply, and by all means make your Navy as efficient as possible. Do not put all your eggs into one basket. Colonel Grattan asked us to increase the Navy. Admiral Close has told us, and Admiral Sir John Hay also made a similar statement, and Colonel Grattan is fully satisfied, that if we were supreme at sea we need take no other measures for safety. Well, it is dangerous to put all your eggs into one basket. No business man would do it. A business man does not depend entirely upon one thing. He takes several courses to ensure that his business does not suffer, and he exercises a great deal of forethought to know what is likely to happen in the future. At all events, successful men do so. The cost of doubling the Navy would be something like 36 millions, and if you double your Navy you double the cost. Then there was a gentleman who got up and told us that he had got a remedy up his sleeve, and I was very grateful that my paper had brought a saviour to this country. But when he unfolded his remedy I do not think I appreciated it. He told us that farmers should be compelled to grow wheat, and have the land rent free or for very little, and that taxes should be remitted on all land growing wheat. He said other things which he thought would increase the growth of wheat. I do not quite see why the landowner who has suffered as much as any man I know in the last thirty years from falling rents, and why the farmer, who in many cases has lost his capital, should be compelled to grow wheat when they can at present prices grow other things which would pay them far better. The trend of everything on the land of late years is to give the tenant a free hand. Now you are asked to go back and compel a man to grow a certain crop whether it would pay him or not. The poor farmer would be worse off than before. He then told us that we could grow 22 million acres of wheat in this country. I look upon it that there is a great deal of land in this country that would not grow wheat at present prices at all, even with a small bonus; and even if the landlord gave it for nothing the tenant would also have to work for nothing. Then Admiral Sir Edmund Fremantle spoke, but I do not think there was any question that he raised which I have to answer. Major-General Sir Edward Barrow was the next speaker, and he said, I think, that if we carried out the plan suggested we should not be able to grow wheat enough. Well, gentlemen, I never thought we should. But every little makes us a little more safe. If we double our present home production we are in a safer position than we were before. Surely we must be in a safer position if we double it, and there is no reason why we should not do so. He alluded to the value of getting the peasants back to the land, with which I thoroughly agree, and I agree with several remarks of the speakers who said that we must make the life of the country labourers more attractive, and give them better cottages and better surroundings, and set up clubs in the villages, and give them papers and other things which men living in the towns have. That will have to be done before we get them back. At the same time, if we could make wheat more profitable the farmer would be in a better position to help his labourer, and to make his life a little happier. The speaker thought that the remedy would be the buying of options and having corners in wheat and cotton. I believe that there was a speaker here on the last occasion who told you distinctly that options were really nothing; they were simply

imaginary, and that people were not obliged to deliver them even if you bought them. You could go behind their backs if you had more money and secure the articles. I quite agree with one speaker, that if we were at war you may depend upon it that if the country was one not very friendly to us there would be no necessity to deliver the wheat. I do not believe in corners or options. The only country that deals with options is the United States, and though I hope that we may never be at war with them, you must not say that we never shall be. You have got to imagine difficult circumstances. We get 62 per cent. of our wheat from that country. He suggested a bonus to corn merchants to hold wheat. I sketched out something like that. I said that rather than have granaries I would give a bonus to a certain number of merchants or syndicates of moneyed men to hold wheat at certain big ports in this country. That is one solution. I do not favour it, but I would rather do that than have national granaries. Commander Caborne asked what would be the cost of my scheme. I find that this year we grew 5 million quarters of wheat. That is a very bad yield. We ought to have more. Supposing we grow 6 million quarters, and we gave £1 a quarter as a bonus, the scheme of putting 4s. on foreign wheat and 2s. on wheat from the Colonies, and one and a-half times as much on flour, would secure the sum to pay the bonus, and there would be no actual money levied. The tax would pay the bonus, and I do not think that it would materially raise the price of wheat, because we should have more wheat grown and more wheat coming in. Dr. Ginsburg alluded to the fact that corners were of no use in case of war, and he called attention to the fact that Gibraltar possesses twelve months' supply of foodstuffs at the present time. He said that we certainly ought to have the same as far as this country is concerned. I thoroughly agree with him in every possible way. If we take steps to ensure a year's supply at Gibraltar, surely we ought to take steps for four or five months' supply in this country. He put a very vivid picture before you how the Romans fell in discouraging agriculture, and that should be some incentive to the Government to take steps to promote the interest of agriculture, especially when we could secure a larger amount of foodstuffs by doing so. Dr. Miller Maguire asked me a question as to what difference it would make whether the corn came from Argentina or Canada or the United States. I do not think that there would be any difference, except that if we were at war with the United States they would take good care that we did not get any corn. They would try to prevent us from having it from Canada. At the same time, the Colonies would try to send us wheat, and possibly some of it would get here. 62 per cent. comes from the United States, and it is a dangerous situation to have 62 per cent. coming from a country which also, to a certain extent, can jeopardise something like half the wheat which comes from the Colonies, namely, from Canada. Sir John Hay alluded to the desirability of training boys for the merchant service, and I think that it is a most admirable suggestion. Captain King Hall thought that it was an impossibility to have war with the United States. I hope that it is, but, as I said before, it may be. He alluded to the fact that rice was not made contraband of war in a recent case. Well, in that case we were just in this position:—We were strong enough to say that we would not have it a contraband of war, but if we had not been strong enough it would have been made contraband of war. And that is what it all comes down to. If you have a strong back you can say anything. Mr. George Quick was very anxious that we should get the men back to the land. I must say that I

am equally anxious. He rather advocated a sliding duty in preference to my scheme. Well, I do not do so, because I think that this is very simple, and one that will work well. He also advocated that the various towns in the country should look after the food supply. I do not think that it is a question for the towns at all. I think that it is a question for the Government to take up, and nobody else. I was extremely pleased with the very able speech from Mr. Charles Forward. He alluded to the question of a campaign. I think that it is most admirable, and I only hope that he, with his vigour, will take the matter up and help to a conclusion. He also alluded to the fact that a biograph should be used to demonstrate town life and country life. I think that that would be an admirable thing to do. I was glad to hear from him that as a large employer he seemed to think that there was a desire on the part of some men to get back to the land. Lord Wemyss I thoroughly agree with. Oats are very good food for the people—one of the best foods—and I am sorry to know, as he says, that in Scotland the use of oatmeal is discouraged or gone out; but I was under the impression that in this country there was more oats and oatmeal consumed than there was twenty years ago, taking people all through. He also alluded to the fact that I said that in a state of siege they could easily burn the stacks. Well, you have to point out every danger, and you have to advocate what is best in case of invasion. I hope that we may not have an invasion, but I simply put it forward as showing that my scheme was preferable to granaries, because granaries can be destroyed much more quickly, and I say that stacks are preferable to granaries. Well, we may, without doubt, at some time or other, without any inclination on our part, be forced into war simply to protect our own rights. Therefore we have to look facts in the face. It has been pointed out—I have had it brought to my notice—that in case of war a great deal of the food that comes into this country would necessarily have to come in foreign ships. And no doubt, too, the freight and the insurance on those ships would be very high; and you may depend upon it that though we may have a very powerful Navy, if we had a combination of countries, such as the United States and Russia, we should practically be losing something like 70 per cent. of the wheat supply of this country. Therefore I say we ought to look it fully in the face. In conclusion, I would say this:—You must prepare in time of peace, so that you will not be caught napping if war takes place. "Self-preservation" is the first law of Nature. Certainly our duty is to see that we have a good food supply in case war does break out. I know that this question of bonuses rather upsets our ideas, but we have to conform to new ideas. If we cannot grow wheat at a profit, we must give the bonus; and at the same time we should increase our population in the country districts. The South African war is an instance of our not being prepared. If we had been thoroughly prepared for that war, and a little forethought had been exercised, it would have been over in half the time, and would have cost only half the money. If you would keep this question alive do not go hat in hand to the Government. You must adopt a higher plane, and keep the pot boiling until the whole country realises the fact that we are in a state of great danger. I beg to thank you one and all.

The CHAIRMAN (General Lord W. F. E. Seymour, K.C.V.O.):—I will ask you to give a vote of thanks to Mr. Mansell for his interesting lecture, and for the words that he has spoken in this

discussion. He has put the matter very clearly, and I think you will agree with me that there is little or nothing for me to say in summing up. Mr. Mansell, in his lecture, gave his advice on two lines. The first line was increasing your home supplies; and the second was stimulate your Colonies to grow a larger area of wheat. I confess that I am not quite farmer enough to understand how the home supply can be increased at this period of our country's history. It has been shown by different speakers how that terrible exodus from the country of labourers into the great towns, very much, I believe, to their detriment, is increasing year by year and month by month. The question is—and I should like Mr. Mansell to say—how he proposes to bring them back. The stimulating of our Colonies to grow a larger area of wheat is, I think, unanimously the opinion of all those who have spoken on this subject; but I quite agree with what has been said by one of the speakers, that it is no matter where the corn should come from—we should be independent. I think that another speaker said the same thing. Lord Strathcona, at the last discussion, said that in fifteen years Canada would supply Great Britain with all the corn and food that would be necessary. But fifteen years is a very long period, and that would entail (as put forward by so many distinguished naval officers) a very long line of ships across the Atlantic to keep a strait for the safe convoy of the corn. To put a military parallel. We all recollect that two years ago the Boers with a very small force—perhaps one-sixth of the force that we had in South Africa—were able at any one moment to come in and destroy the line of our convoys that were moving across the country; and although I cannot as a military man in these days quite go back to my naval days and say that that could not be done if there was a larger Navy, still, there it is. I do not think that we ought to be, as has been said by several speakers, entirely dependent on the increase of the Navy, which, as Mr. Mansell has said, would double the Navy Estimates. I will just say one word about the amount of wheat coming from Canada. I was very much struck, when I was at Lake Superior two or three years ago, to find that even if we were not at war with America a band of our friends at Tammany Hall or raiders in the course of a few hours could wreck several million bushels of wheat that was being conveyed to the seashore. That, I hope, now will be remedied by the new Northern Pacific and Canadian Railway being built from Port Simpson on the Pacific to a point near Quebec; and I think that there never was a sounder policy than that initiated by the Canadian Government, in encouraging the building of that railway. I was also when in Canada very much struck with the large number of fishermen and others who for three or four months in the year have little or nothing to do, and who would make first-rate merchant-seamen to take the place of the number of foreign seamen that we have in so many of our ships. I think that Mr. Mansell alluded to foreign ships coming over; but that would be a very small percentage. I think that what he really meant was the English ships manned by foreign seamen. In Nova Scotia, as you perhaps know, there is a certain area which could be looked upon as advantageous to naval training. It has between five thousand and six thousand fishermen who would be available in case of a bounty being given to man our merchant-ships. They would be driven out of the fishing trade by any war that we might have with a maritime Power, and it would be quite worth while to look to them for manning our merchant service in case of war. I now only have to ask you to give your vote of thanks to Mr. Mansell for his very able lecture, and also, may I add, to the gentlemen who have given us such very valuable information during the discussion to-day.

Mr. A. MANSELL :—I beg to thank you very much for the vote of thanks which you have passed. I can only say that I thoroughly appreciate the kind response you have given to the paper, and I trust that my humble efforts and the valuable information which we have had from the other speakers will have some weight with the Government, and that some good will result.

OBSERVATIONS ON THE WAR IN SOUTH AFRICA.

AN ADDRESS DELIVERED BEFORE THE DUTCH SOCIETY FOR THE
ADVANCE OF MILITARY SCIENCE (VEREENIGING TER BEOEFENING VAN
DE KRIJGSWETENSCHAP).

*By Captain Jonkheer J. H. RAM,
Military Attaché with the Boer Forces under General Botha.*

Translated from the Dutch, by permission of the Author, and of the
Society, by F. S. ARNOLD, B.A., M.B. (Oxon.).

THE most interesting period of the late war in South Africa is the earlier, that of "regular" war, which came to an end over the whole territory of the Republics when, in September, 1900, the Commandant General of the South African Republic determined to abandon the Delagoa Bay Line, thus severing his connection with Europe. The military attachés of the various Powers which had sent representatives to the Army of the South African Republic then left the theatre of war on the advice of the Government, and for information concerning the further course of the struggle they, like the rest of the world, were dependent on incomplete and often untrustworthy accounts. Though, in the guerilla war which now followed, there were actions which would be rightly classed under the head of "regular" war, it is nevertheless improbable that a study of these actions would lead to tactical conclusions differing in any way from those drawn from a study of the first period. Only those whose study of this war is made with a less limited aim than I have set before myself in these observations, who wish to see what steadfastness and endurance can be shown by a people fighting for its freedom, will direct their attention by preference to this later period. For military students it is of subordinate interest. Those, too, who believe that an obstinate guerilla is possible in this country, will probably admit that the geographical conditions here are so absolutely different from those of South Africa, that such a struggle would have to be carried on on quite other lines than those adopted by the Boers. My own opinion, however, is, that in a country so small as ours, and so thickly populated, a guerilla war could only last a very short time, or, more probably, would not be embarked on at all. Above all, the terrible misery which such a struggle inevitably causes and the cruelties with which it is necessarily associated, compel us to use every effort to avoid it; we must depend on our Army and strengthen that in every way possible. I fervently hope that the experiences of this war may be turned to profitable account by our Army.

It goes without saying that these experiences must be used for the drawing of deductions, with the greatest caution. The constitution of the Boer force was, in principle, different from the organisation of our European Armies. In these we have a combination of three arms, a staff service, and a well-organised commissariat. In the Boer Army almost all this was wanting. The chief arm was mounted infantry. The field artillery was so weak that in most of the actions it had to avoid an artillery duel, and served as infantry-ordnance; cavalry there was none. The Commander-in-Chief possessed no ready organised staff, and that improvised for the occasion worked very imperfectly. The commissariat also had to be summoned into existence at the beginning of the war, and suffered much from the lack of careful organisation beforehand. Add to this that the feeling of respect for authority was almost non-existent in the Boer Army, and that thus, discipline, such as our European Armies know, was wanting, and that all decisions were arrived at in a Council of War, so that no single person ever felt himself responsible for any course of action decided upon—a state of things which must obviously be unfavourable to energetic action—and one can easily understand how difficult it is to draw a parallel between a force with so little cohesion, and a European Army, and how cautious one must be in attempting to utilise here experience gained in South Africa.

What I have here stated concerning the Boer forces was for the most part known before the war.

Military authorities in this country, and probably also abroad, had little expectation of any considerable Boer success. In the *Nieuwe Rotterdamsche Courant*, of October 20th, 1899, we find the following from a military correspondent:—

"People here are still optimistic concerning the outcome of the war. Prophecy is notoriously dangerous, but I fear that in the long run the Boers will not be able to make head against the English. Where the will of the Commander-in-Chief is not law, but everyone thinks he has a right to contribute to the discussion, one will want to go this way, another that, and disputes and disunion must arise between the leaders. So long as the war remains a mere guerilla, the Boers, with small detachments of at most 300 to 400 men, will perhaps, gain partial successes here and there, of no decisive character. When the Boers, however, have to meet the main English Army, and are obliged to concentrate their forces to oppose it, I am afraid they will suffer heavy losses, because their leaders have not learned to manœuvre large bodies of men, and have little tactical knowledge, and because the rank and file of the Boers will prove little fitted for such a struggle."

The expectations entertained by the English military authorities concerning the contemplated war are to be found clearly stated in a secret document prepared by the General Staff and revised in June, 1899. At Pretoria we were allowed to inspect this document. It contained, among others, the following sentences:—

"The real genius of the Boer is, in fact, to fight under cover, and this dislike to risk death seriously diminishes his military value in offensive operations, or in any position the flank of which can be turned."

"The Dutchman is, in fact, by race and instincts, of a stolid, stubborn nature, but it would be absurd to expect from untrained farmers that readiness to face death at the bidding of a superior,

which, history emphatically teaches, can only be created and fostered by discipline.

"Another serious cause of weakness in the burgher forces in past wars has been the imperfection of their transport and supply arrangements. No organised system appears to have existed, the burghers were required to arrange for their own supplies, and were allowed for this purpose to have with them their private ox-wagons, in which not infrequently both women and children accompanied the force. Under such a system, however great the tactical mobility possessed by the Boers, strategical mobility was impossible, and a defeat must have entailed disaster. . . .

"A perhaps still more important point arises from a consideration of the great increase in the numerical strength of the Boer forces, and the absence of any leaders, qualified, by either war or manœuvre experience, to command large bodies of men in the field. Excepting the brief incident of the Jameson Raid, Joubert alone has any experience of high command, and it is believed that the force at Laing's Nek, about 3,000 strong, was the largest that has ever been united under his orders. The district commandants who are left of the last war, had no greater experience in command than that of units of 100 strong. As to the fighting at Doornkop in 1896, it may be said that it was not of such a nature as materially to test Boer leadership.

"Looking, therefore, at the above considerations, it may be considered that the burgher forces, although far more numerous, would not be so good in *personnel* as they were in 1880. On the other hand, they will have a better rifle in their hands, and an unlimited supply of ammunition, and the advantage of modern field artillery and machine guns.

"The masses of men that the Transvaal expects to, and probably within certain limits will, put into the field, will, however, be in themselves a difficulty, having regard to their lack of higher organisation and of trained staff; while the necessity of escorting, both on the march and in action, three or four batteries of field artillery, will entail some modification of the loose tactics of the Boers. Moreover, it should be borne in mind that the Boers are very sensitive as to their own flanks and rear, and, for that reason, have always dreaded English cavalry. They have also yet to feel the effect of modern shrapnel, and it is very improbable that either in *matériel* or *personnel* their field artillery will not be very inferior to ours in action.

"It may therefore be anticipated that while the Boers will show some of their old skill in guerilla warfare on ground favourable to such tactics, yet they will have but little chance of success if compelled to meet in the open plains of the Free State or Transvaal, an adequate force of disciplined troops, complete in all three arms, and it appears certain that, after serious defeat, they would be too deficient in discipline and organisation to make any further real stand.

"It may also be expected that in a prolonged campaign the burgher forces would lose much from that melting away which is inevitable in all imperfectly disciplined volunteers; the ties of wife, children, and farms, left unprotected and uncared for, would prove too strong for human nature after a few months' absence."

It will be seen that the expectations expressed in this very interesting document agree in the main with the forecasts put forward by European military experts, and, I would add, the course of the war has justified them partially, but not altogether.

When during a period of two months the Boer Army had demonstrated its superiority in the field by a slow but continuous gaining of ground, there reached us about the middle of December, 1899, the news of three great Boer victories over the British troops, which had gone to South Africa under command of General Buller. The names of Stormberg, Magersfontein, and Colenso, caused the wildest excitement on the Continent and deep depression in England. The Continental press declared, in round terms, that the English Army would fail to pierce the cordon of Boers which blocked the way to Ladysmith and Kimberley, and it did actually seem for a short time as if the almost undisciplined Boer forces would succeed in bringing to a standstill the disciplined and enormously larger Army of Great Britain. In the face of a fact so amazing, so utterly at variance with all the teachings of military science, many felt the foundations of their scientific convictions crumbling beneath them, and it seemed for a moment as if those who cried that patriotism and enthusiasm were a firmer cement for an Army than strict discipline, were in the right. The further course of the war has, however, proved the erroneousness of this view. If the outcome has saved some of us the feeling of bewilderment which comes from finding that the science in which we have trusted is based on insecure foundations, it nevertheless moves us to sadness, for it is an outcome which has brought much bitter pain and suffering to our kinsmen in the Republics.

The three shortcomings which, in the opinion of the English General Staff, and in that of many independent military experts, would place the Boer Army at a disadvantage as against the British, were the absence of military discipline, of a good organisation for war, and of experienced leaders. To set against these drawbacks there was this solitary advantage, that the individual Boer, as a marksman, as a horseman, and in respect of his power to endure hardships in the field, was enormously superior to the British soldier.

Having stated that the expert military criticism of the Boer Army was shown to be, *in the main*, but *not altogether*, just, it seems incumbent upon us to give here some explanation of the statement.

The pronouncement of the writer in the *Nieuwe Rotterdamsche Courant*, to the effect that the Boer Army would turn out to be suited only for guerilla operations, with detachments of at most 300 to 400 men, was very conclusively refuted by the fact that the united forces of the two Republics, amounting to about 20,000 men, and covering a line of 180 miles, invaded Natal, suffered at the outset two partial reverses (Glencoe and Elandslaagte), but nevertheless continued their advance, beat off at Modderspruit an attack delivered by the English Army in Ladysmith, captured on the same day 1,000 men at Nicholson's Nek, shut up the whole force under White in Ladysmith, and later succeeded, on four separate occasions, under conditions most unfavourable to themselves, in frustrating General Buller's attempts to relieve Ladysmith. These are operations which cannot possibly be regarded as coming under the head of guerilla warfare, as was also the action at Magersfontein, where General Cronje, with about 4,500 men, repulsed a force of three times the size. Looked at superficially these achievements might incline one to think that the above-named shortcomings were not very serious, or, at any rate, that they did not actually make themselves very heavily felt. Very different, however, must our judgment be when we consider what might have been achieved in these cases had the Boer force been an *army, disciplined*,

well organised, and well led. At the outbreak of the war the Boers held much the best strategical position. A small force, holding the passes into Natal, would have been quite sufficient to ward off all danger from that quarter, and the united forces of the Republics, might, with an overwhelming superior force, have made themselves masters of the greater part, if not the whole, of Cape Colony. The Dutch population of the Colony would probably, for the most part, have joined them, and this would have given the Boer forces the advantage over any Army England could have sent out to re-conquer the Colony.

Another method of action which equally promised success was to invade Natal with the whole force, that Colony being only weakly held at the beginning of the war.

A vigorous offensive, whether in Natal or in Cape Colony, was obviously the logical sequel of the ultimatum sent to England, in which the Government of the South African Republic, in the event of England being determined on war, itself fixed the time for the commencement of hostilities. The first movements of the Boer forces, however, were based on the idea of a strategic *defensive*. Defence of the frontier on all sides was the first military measure, and with this were combined attempts to destroy, in the enemy's territory, the railways leading into the Republics. The reason for this line of action was the fear of invasion. Only when this failed to take place was the enemy's territory invaded, at first in a hesitating manner, and later, when the powerlessness of the enemy was shown by his inaction, more resolutely. The retreating enemy was followed, but not attacked. The Boers confined themselves to an investment of the enemy's force.

That a strategy which is more the outcome of the pressure of circumstances, than the execution of a previously thought-out plan, is not likely to give very brilliant results, must be plain to all.

The question inevitably suggests itself, why, when war broke out, a vigorous offensive was not immediately entered upon. The answer to the question is naturally not to be given with certainty; there may have been political considerations at work of which we have no knowledge. Be that as it may, two factors may be pointed out which undoubtedly contributed towards the decision, and which—even apart from other possible factors—furnish a sufficient explanation of the facts. In the first place, the strategy adopted was the natural outcome of the political conceptions of the Boer leaders. In a political sense the Boer Republics were thinking simply of defence. The statement may sound strange, but even the sending of the ultimatum was a defensive act. Secondly, the instrument of war the leaders had at their disposal consisted of the enrolled burghers of the Republics, and was not well fitted for the carrying through of a good strategic offensive. Experience soon proved this, and brought the three shortcomings, of which I have spoken above, very plainly to light. The results of faulty organisation and of the lack of a good commissariat were very soon apparent. During the advance into Natal, nay, even when the commandoes were assembling at Landspruit, the reports sent to Pretoria by the Commandant-General contained numberless complaints concerning the difficulties attending the commissariat. General Meyer, who commanded one of the columns, complained that his men were entirely unprotected from the heavy rains, which continued for days together, because the overcoats asked for were not sent.

"The flour sent from Pretoria"—so runs a complaint from the Commandant-General—"is of bad quality, and owing to the incessant rains the men are unable to bake; supplies of bread must be sent." When the bread was sent, it proved almost uneatable; the clothing which was supplied to the burghers was very bad, and the shoes were unusable.

"If the present state of things continues," the Commandant-General adds, "the burghers will die of misery and privation, and there will be no necessity for the English to defeat them." Complaints, too, of "worn-out" horses, "weak" mules and so on, were received during the first weeks of the war. Even when the forward movement had ceased, and the foremost commandoes were on the line of the Tugela, continual complaints were received from there of bad nursing arrangements, lack of slaughter cattle, etc., etc.

But shortcomings in other branches of the service also made themselves felt; especially the lack of trained staff officers and of a good intelligence department. The enemy's strength and movements were very imperfectly known, and co-operation between the different columns was chiefly conspicuous by its absence.

That General Symons' column, advancing from Dundee against General Meyer's commandoes, was able to force back the latter, was due to the inactivity of General Erasmus, who, on the ground that he was surrounded by a heavy mist, did not, in spite of previously promised co-operation, hasten to General Meyer's help.

That General Yule, who took over the command after the death of General Symons, was able to start his whole force unhindered on their march into Ladysmith, was due to the fact that after the battle of Dundee (Glencoe), all touch with the English force was lost.

The fight at Elandslaagte on the 21st October gave rise to recriminations between the leaders of the two main Republican forces. General Joubert had expected support from General Prinsloo. A few days later the position was reversed. The Free State troops were attacked at Rietfontein by the English from Ladysmith, and General Prinsloo was afraid of a repetition of the Elandslaagte disaster. The Transvaal troops, however, were detained by the Dundee garrison, who did not commence the march to Ladysmith until the 23rd, and thus remained far from the scene of action. Urgent requests for assistance came from General Prinsloo, but it could not be given. It was not till four days later that the two forces united near Ladysmith. Even then they were not put under one leader, but acted independently, for the attainment of the same end, it is true, but not always in complete harmony one with the other. At the Transvaal head-quarters there was, for days, complete uncertainty as to the movements of Meyer's column, which was endeavouring to overtake General Yule's force, unsuccessfully, owing to the insufficient provision made for man and horse.

The absence of military discipline was not very severely felt during the early weeks of the war. One certainly heard complaints that some burghers were not very willing fighters, and that others were asking for leave to visit their farms, and it was then that a commando refused to occupy a position assigned to it by resolution of the Council of War. On the whole, however, in contrast to a certain few instances of this kind, the great majority of the burghers showed marked enthusiasm for the cause, and readiness to fight for it. Notwithstanding the hardships which had to be endured, the burgher forces pursued their task

with courage and spirit; the enthusiasm with which the war was begun had only partially cooled, and a speedy end was hoped for. As soon—so argued many—as Ladysmith had fallen, England would see, as she had in 1881, that the struggle was hopeless. When, however, the war dragged on month after month, signs of discouragement became everywhere visible. When the English Army, whose strength could not (so the Boers thought, and so also at first thought most European experts) be brought up to more than 100,000 men, was reinforced by division after division from Great Britain and the Colonies, many began to look upon the struggle as a hopeless one. When, finally, Lord Roberts, by the organisation of an improved system of transport, had made himself independent of the railways, penetrated into the Free State and surrounded Cronje, many burghers left their commandoes and made for their homes, and this movement became still more pronounced after Cronje's surrender. For some weeks the Free State was almost without a burgher force.

Then, for the first time, the want of military discipline made itself felt in full force. The leaders realised thoroughly that the vulnerable point of the overwhelming English Army lay in its long lines of communications, but the burghers could not be roused to engage in the dangerous work of capturing convoys and destroying railway lines. With the exception of De Wet's master-stroke in capturing part of the ambulance train of the English Army at Kiel Drift, no attempt of the kind was made.

During four months I accompanied the Boers in their retreat before the English, and saw the disorganisation in Botha's force steadily growing as the retreat proceeded.

Those who lived in the districts occupied by the English, for the most part returned to their homes, or formed small commandoes, which remained in the neighbourhood. The Commandant-General, on whom the task rested after the capture of Pretoria, of protecting, with a handful of men, the Government of the South African Republic, which had taken up its quarters on the Delagoa Bay line, against the advancing English troops, realised that the impossible was demanded of him. In moments of discouragement he was forced to acknowledge "with such an Army one cannot fight."

It would, however, be unjust if I allowed my estimate of the value of the burgher force to be governed entirely by the expressions of those days, just as it would be unfair to base such an estimate entirely on their exploits, during the opening of the war. If we seek to draw, from the events of the war, answers to the questions put by military science, we must give our attention impartially to the whole period of regular war.

The most interesting of these questions is naturally that which has to do with the working of modern fire-arms and their influence on tactics. Of hardly less importance is it to consider how far this war throws light on the principles which should govern the organisation of a modern Army (*legervorming*).

The answer to the first question can only be found by a careful consideration of the various actions, but more especially of those which took place in the beginning of the war. It was these that led the English to change their attack formation, and during this period the Boers were in good fighting spirit. In the second period, that immediately preceding the guerilla, discouragement was a factor which prevents the drawing of just conclusions.

Many accounts of these actions have already been published; they, however, are for the most part full of inaccuracies concerning the Boer strength and their losses. In the account which follows, the data are stated as accurately as possible; the fact, however, that the Boers themselves never knew their own strength *exactly*, makes *absolute* accuracy impossible. Instances of successful frontal attacks occur chiefly in the early period of the war; later, they were extremely exceptional. In almost all cases they took place under conditions extremely favourable to the attack.

The first successful frontal attack was that of General Symons at Dundee (Talana). He had a force under him of about 3,000 men and 18 guns. The strength of the Boer force under Lucas Meyer can only be given approximately. I believe, however, that there cannot have been more than 1,500 Boers engaged.¹ Their artillery consisted of 4 Krupp guns.

The Boers occupied a hill east of Dundee, with the object of shelling the English troops in that town, while another Boer force, under General Erasmus, was to open fire simultaneously from the north. The English, when fire was opened upon them, immediately advanced to attack the force under General Meyer; General Erasmus, according to some accounts on the ground that the Impati Hill, on which he was, was enveloped in mist, took no part in the action. In consequence, the object aimed at, the shelling of Dundee from two sides at once, was not attained, and Lucas Meyer's plan miscarried. There was no great inducement to him to make a prolonged stand against the English attack, especially when it became certain later in the day that General Erasmus was going to take no part in the action. The burghers were bitterly disappointed, and it is to this that we must partly ascribe the fact that they made no very obstinate defence. The English superiority in artillery also helped to discourage the Boers, while, finally, the danger of being surrounded, to which they saw themselves exposed, and scarcity of ammunition, forced them to retreat. The attack, thanks to these various circumstances, succeeded, but the condition in which the attacker found himself was such that pursuit was not to be thought of. Notwithstanding this, his loss amounted to only about 7 per cent.¹ A detachment of cavalry, consisting of 9 officers and 211 men, lost their way and were captured. The attack was directed against a hillside and across ground containing only two moderately well covered breathing points. However much we may admire its boldness, I do not believe it would have had the slightest chance of success, but for the support afforded by the artillery. The Boer loss was considerable, amounting, according to the most trustworthy reports, to 9 per cent. of the strength.

The following day the detachment, under General Kock, which was at Elandslaagte, most imprudently accepted battle with an overwhelming superior English force sent from Ladysmith. The Boer force was at the outside 1,000 men, with 2 guns, while General French, the English commander, had, by mid-day, 3,400 men and 18 guns. Here again an enormous superiority in guns. The attack—a flank attack—combined with a feint on the front, which only later was pushed through and made the main attack, cost the attacker a loss of about 8 per cent. There was a moment when the attack ran great risk of failure, and it may be said with confidence that had the

¹ Killed 10 officers and 31 men; wounded 20 officers and 165 men. (General White's report of 2nd November, 1899).

defending force been only very slightly stronger the English troops would here have suffered a defeat.

The Boers suffered in this action a loss of 10 per cent. in killed and wounded, and over 13 per cent. in prisoners. This high percentage was partly the result of the pursuit by the lancers.

The attack took place under cover of an artillery fire which enormously outweighed that of the defence, so that this action helps us no more than that of the day before, to form a just estimate of the power of the defenders' rifle fire.

It may here be remarked, in passing, that these two actions, though of little tactical importance for the English, had most important results in a strategical sense. They delayed the Boer advance for several days, gave General Yule the opportunity to unite with General White, and postponed for several days the complete investment of Ladysmith. During these days the town received re-inforcements from Durban, including 6 naval guns, which, throughout the siege, were able to prevent the besiegers drawing their investing circle close enough to make their bombardment of Ladysmith effective.

During the next few months, the English were able to put one more successful attack to their credit in Natal, viz., the night attack on the Boer position near Willow Grange, on the 22nd November. The success of this attack was due to the lack of efficient sentry work on the part of the Boers.

The Boer force in Natal made two successful attacks in the early months of the war; the first, on 30th October, led to the surrounding and capture of Colonel Carleton's force on Nicholson's Nek. This enterprise, carried out on the same lines as the storming of Majuba in 1881, was crowned with startling success. The English, about 1,000 strong, were on the summit of a long ridge; instead of spreading themselves over the ridge, they remained massed in compact bodies. The Boers, who numbered, so far as my information goes, about 500 men, surrounded the ridge, and poured in a concentric fire on the masses of the enemy, then, creeping slowly forward from cover to cover, they narrowed their circle. When the ammunition of the English began to give out, and they saw no chance of escape from their investment, the white flag was raised, and Colonel Carleton surrendered with his whole force of 37 officers and 917 men.

There was no storming of a position here, any more than in the Majuba episode; "stalking" more accurately expresses the nature of the operation. The Boers were of course very widely spread out, the English packed closely together. The Boers were only exposed to a frontal fire, the English to a fire from all sides, so that for them there could be no question of cover. The losses on the English side amounted, so I was assured by Commandant Van Dam, who, with his Johannesburg police, took the chief part in this action, and to whom the chief credit for the exploit is due, to 300 killed and wounded. According to a Free State report, however, the losses amounted only to 100 killed and wounded. Neither of these figures, however, agrees with the English official reports. The Boer loss was about 20 killed and wounded.

Had an attempt been made to storm the English position, the result of the action would probably have been very different. The early months of the war in Natal furnished several instances of unsuccessful attacks.

At Rietfontein, a detachment of Free Staters of about 1,000 men, with 1 gun, was attacked on 24th November by a force from Ladysmith, outnumbering them by about four to one, and led by General White in person. The English force had two field batteries and one mounted battery. They did not succeed in reaching the Free Staters' main position, and their loss amounted to 11 killed and 103 wounded, or about 3 per cent. It is true that General White states in his report that his intention was not to push the attack home, but by creating a diversion to cover Yule's retreat from Ladysmith. It is plain, however, from his account, that he thought the difficulty of seizing the Free State position would be very great. The Boer loss in this action was 9 killed and 21 wounded, about 3 per cent.

On the 30th October, the day on which Nicholson's Kop was taken by the Boers, General White's whole force of 12,800 men attacked the Transvaal forces, whose exact strength is not known to me. It is an outside estimate, however, if we suppose them equal in numbers to their opponents. With reference to the action at Modderspruit, which developed out of the English attack, and which was carried on over a front of more than 12 miles, the Commandant-General reported that it was the heaviest action Afrikaners had ever been engaged in, and that it was in the main an artillery duel. The loss of the English was less than $2\frac{1}{2}$ per cent. their force. Their object, however, the occupation of some hills near Ladysmith, was not attained, and the action had far-reaching moral effects.

On the western frontier the first serious encounter took place at Belmont on the 23rd November. General Methuen, in command of a force of 7,500 men and 16 guns, here attacked a position held by the Free State General Prinsloo, who had 1,800 men and 2 guns.

The English, who had made a night march, arrived in front of the position at dawn. Owing to one of the attacking columns having gone astray, a frontal attack became necessary, though not originally intended by the English general. The artillery of the attacking force seems to have taken little part in the action. General Methuen gives as his reason for this, that G.K.T. fire does little harm to a well entrenched enemy, but only frightens him, and it was his wish to get as near to the enemy as possible. The Boers, however, did not await the attack, but retreated upon Graspan. Their losses were 12 killed and 40 wounded, thus under 3 per cent. (General Methuen speaks in his report of having taken 50 prisoners in addition.) The English estimated their opponents' strength at from 2,000 to 2,500 men, too high an estimate, but one showing a very much smaller error than those to which subsequent actions gave rise. Their losses were considerable, 3 officers and 50 men killed, and 82 officers and 220 men wounded, the total amounting to about 8 per cent. of the strength. In explanation of the Boer retreat, it should be remembered that they knew that reinforcements for the enemy were on the march, though still at some distance, and, further, that to hold a position to the bitter end, was contrary to their deliberately adopted tactics.

The action at Graspan, which took place two days later, was also prefaced by a night march, which brought the English troops in front of the Boer position at daybreak. The Boer force here consisted of about 2,000 men, with 4 guns and a pom-pom. They were led by Generals de la Rey and Prinsloo; the first was in command of the Transvaalers (about 700), the latter led the Free Staters (about 1,300). On this occasion the Boer force was threatened both in front

and flank. The chief attack, on two kopjes forming the right wing of the Boer position, was prepared by heavy artillery fire—one of the English batteries fired 500 shells on this occasion. General Prinsloo says in his report of the action:—"Although the enemy's force enormously outnumbered ours, his victory was entirely and solely due to his great strength in guns and Maxims."

The Boers, who saw their line of retreat threatened, abandoned their positions about mid-day. Their exact losses are not known, but according to private accounts they amounted to about 70. The English lost 18 killed and 143 wounded, or about 2 per cent. of their strength. Most of this loss was sustained by the naval brigade, which, with a battalion and a half of other troops, was first into the abandoned Boer positions. General Methuen ascribes their loss to their maintaining too close a formation, and their inability (owing to inexperience) to take advantage of cover. According to the report of the officer commanding the brigade, it was deployed in a single line with intervals of four paces between the men.

It will be noticed that the experience of Belmont had led Lord Methuen to prepare his attack by a vigorous artillery fire. He says with reference to these actions:—

"The loss in both was heavy, and convinced me that if an enemy is determined to hold his ground, he can do so against a largely superior force," and, he adds, "it is much to the honour of our men that nothing would stay them." The percentage of loss on the English side hardly justifies this expression; nevertheless, I think the English troops deserved the praise of their general, for the defenders' fire has, in consequence of the use of smokeless powder and the magazine rifle, a far greater moral effect than would be inferred merely from the percentage of loss.

The Boers retreated to the Modder River, where General Cronje, who had in the meantime been sent south from Mafeking with reinforcements, joined forces with them. In the action which took place here, the burghers were led by Generals Cronje, de la Rey, and Prinsloo, Cronje commanding in chief.

The English were under the mistaken impression that only a rear-guard had been left behind at Modder River, and this force they hoped to surround. Orders in conformity with this design had actually been issued, when, just before the troops commenced their march, at about 4 a.m. on the 28th November, news came that the river was strongly held. The actual strength of the Boers at Modder River was 1,800 to 2,000 men, who held a line of 6 kilometres in length, thus one man to every 3 yards. There were Boer positions on the south, or nearer, as well as on the further side of the river. The force which Lord Methuen brought to the attack consisted of 7,000 men, with 16 guns. The Boer artillery in this action consisted of 6 guns and 2 pom-poms.

The attack was commenced along a broad front, and the Boers opened fire on their left wing, as soon as the attacking troops, who were advancing across an almost flat *terrain*, were within effective range; the Boer fire caused heavy loss at once, and the attack was brought to a standstill. In face of the right wing of the Boer position, ran a low ridge, which gave the attacking force a certain amount of cover. As soon, however, as they appeared on the crown of the ridge, they drew upon themselves a heavy fire. The English succeeded, however, on this wing, in occupying a kopje, which more

or less enfiladed the remaining positions. From this point troops were sent across the Modder River, thus seriously threatening the Boer right flank and rear. When evening came on, the Free Staters left their trenches, in consequence of which the whole position had to be abandoned. This was first found out by the English early the following morning. General Cronje complained to his Government of the conduct of many of his officers, who set the example of retreat, and said that fighting, with such men, was a very difficult task. The position could easily have been held, had a vigorous counter-attack been made from the right wing.

The effect of the Mauser fire was so powerful that Lord Methuen, in his report to the Government, described the action as one of the hardest in the annals of the British Army. On the right flank, he said, some of the troops were forced to lie down flat at a distance of 1,200 yards from the Boer position, and in that attitude await the issue of the action. It was impossible to venture on horseback within 2,000 yards of the Boer position. In his official report, Lord Methuen estimates the Boer strength at 8,000 men, thus multiplying their actual strength by four.

Descriptions, in letters from those who took part in the attack, all bear witness to the impression made on the attackers by the Boer rifle fire. Wounded men durst not lift their head to ask for help. Others lay motionless for hours together, because they had found that the least movement brought a bullet in their direction.

The actual frontal attack failed. The attacker was forced to extend his flanks, and only when a weak point had been found in the very extended Boer position was there any chance of success.

The total British loss amounted to 7 per cent., a figure which would not justify the expression used by Lord Methuen in his report, were it not that here also the chief factor was the profound influence on *moral* of modern rifle fire, an influence independent of its actual material effect.

The British batteries that day hurled more than 3,000 shells against the Boer position; the Boers spoke of the action as in the main an artillery bombardment; it was their first experience of a really heavy artillery fire. The few Boer guns could do little against the overpowering fire of the enemy. One Krupp gun and 1 pom-pom were in position on a ridge about a mile in rear of the Boer left flank. The fire from these guns, which the English were not able to locate, helped to repel the attack on the left wing. Two pom-poms and a Krupp gun, between the Riet and Modder Rivers, in the centre of the position, caused the English very considerable loss. These guns commenced firing at 9 a.m., and it was not till noon that the English succeeded in locating them.

The four Free State Krupp guns, which used black powder, were kept under fire by the English from the beginning of the action. It is probably these guns of which Lord Methuen speaks in his report.

From the left wing of the Boer position, the English columns, which were ranged behind a ridge about a mile and a quarter in front of the Boer centre, could be plainly seen. The foremost attacking troops marched in extended formation, but were followed by others in close order. The latter, as soon as they showed themselves north of the ridge, came under rifle and artillery fire, and were repeatedly forced to retire.

The Boer loss was small, about 100 killed and wounded; the horses suffered most, and these chiefly from shell fire. According to General Cronje's report, most of the losses were sustained during the abandonment of the positions.

On the Free State side the leading was most inefficient. The burghers, more or less demoralised by their losses at Belmont and Graspan, had little resisting power left, and bitterly complained of the incompetence of their officers. When General Cronje arrived at the railway bridge where the Free State commandoes were posted, the morning before the fight, some of the field cornets who had been told off to cover the guns asked for information as to how they were to carry out the order; they had no idea what to do, and General Prinsloo was not present. When, about mid-day, the attack began to be directed specially against the left flank, it was the Free State general who gave the order to retreat.

In the battle of Magersfontein, which followed on the 10th December, the burgher force occupied a position nearly 8 miles in length. The position was held by about 4,000 men, *i.e.*, one man to every 3 yards. They had the same number of guns as at Modder River. The guns they had, however, were but little used, as experience had shown that nothing could be gained by an artillery duel, in face of the overwhelming superiority of the British force in that arm.

The English had received reinforcements, and the force now amounted to 13,000 men, with 35 guns.

The attack was again preceded by a night march; it had been calculated that the men would arrive in front of the position just before daybreak, and that the close order, which is the only formation in which men can march by night, was then, and not till then, to be changed for a more extended formation. Meanwhile, the column had strayed from the right direction, and just about daybreak the foremost troops stumbled up against the Boer trenches in the centre of the position. The Boers, who were expecting an attack, had spent the night in the trenches, and had been aroused about 2 a.m. The Scandinavian detachment, which was on outpost duty on the left wing, failed to give notice of the advance of the English. This detachment remained at its post throughout the action; most of its members were killed, and the remainder captured.

The Boers allowed the English to approach within 60 yards of the trenches, and then opened a heavy fire upon them. It is extremely probable that Lord Methuen, who directed his attack against the highest kopje in the position, thought he was attacking the left wing. (This opinion is based on the disposition made before and during the action, not on any statement of Lord Methuen's.) It is most improbable that knowing, as he did, the disadvantages of a frontal attack, and having learnt by experience the advantages of an enveloping movement, he would have here deliberately thrown away the latter, and chosen the former. Of an attempt to surprise the Boers there can be no question, though the early hour of the march, 12.30 a.m., would seem to point in that direction. The high kopje had been subjected to a vigorous bombardment on the previous day. The bombardment, it is true, had little effect, because the Boers were not on the kopje, but in trenches on the level ground in front of it. It, however, warned the Boers that an attack would follow soon. The attack, if, as we suppose, it was intended as an enveloping movement, became a frontal attack pure and simple, for though the British

right and left were pushed out widely, the line occupied by the Boers was so extended that it was impossible to get round their flanks.

The Boer positions were extended two days before the action; originally only the centre, chiefly to the east of the railway line, was occupied. On December 9th, however, it was decided, in a Council of War, to extend the line on both sides, on the east as far as the Modder River, on the west to the western side of the railway. The position thus acquired somewhat the shape of a crescent. It was General Cronje's plan, as he expected an attack on his centre, that his right and left wings should attack the enemy in flank, with the object, chiefly, of capturing his guns. This order was, however, not carried out. One of the field cornets, who stated in the Council of War that he would not carry out the order, was, with his men, transferred to the centre, while a pluckier field cornetcy replaced him. A favourable opportunity for carrying out the design does not seem, however, to have occurred during the action, at any rate nothing came of it.

During the action 300 Boers were despatched from the centre to reinforce the left wing; their carrying out of the order, under a heavy artillery fire, was an act of great bravery; they lost 5 men. The Boers believe that the English discovered their left wing by means of the captive balloon, which remained up throughout the action. However this may be, it is certain that they never liked to see it ascend. After this experience they always looked upon the aerial post of observation, as a great danger to them; when, subsequently, the balloon ascended, it often happened that the tents put up under cover of the kopjes were struck, and the Boers took cover in their trenches.

The regiments which came successively under the Boer fire were all repulsed. The Guards' Brigade was unable to stir from position until after dark.

This was also the case with the English artillery, which, soon after the commencement of the action, formed in battery, but, on this occasion also, seems to have devoted too much attention to the above-mentioned kopje. The Boer positions were difficult to make out, and their artillery took little part in the action.

That the defenders on this occasion showed themselves proof against the demoralising effects of artillery fire, may be ascribed in part to the inspiring presence of Piet Cronje, one of the few Boer generals who knew how to command, and succeeded in getting his commands obeyed.

The English losses amounted to 23 officers and 148 men killed, and 45 officers and 647 men wounded; a total loss in killed and wounded of about 6 per cent.

The Boers lost 71 killed, and 183 wounded, or about 5 per cent.

The loss on the side of the attacking forces was small, and the statement of the English general that most of the losses were sustained in retreating, shows that *the moral of the attacker was broken when only a small loss had been sustained.*

It appears that the greater part of the loss was sustained by the Highland Brigade, who came first into action, and that it was sustained during the first few minutes. That these troops were demoralised is no cause for surprise, but that the other brigades, whose losses were trifling, could not be induced to advance, is a striking proof of the great moral effect of the modern weapon.

(To be continued.)

THE FRENCH NAVAL PROGRAMME OF 1900-1906.¹

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and late Minister of Marine.*

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CHAPTER V. CORSAIR WARFARE.

WE have now to consider in what light corsair warfare is really to be regarded. What advantages it may have for us, and in what measure it would contribute to hasten the final results of a naval war in which we might be engaged.

No question has been, or is still being, more discussed than this one of the utility or otherwise of corsair warfare. Those who consider it as being the principal rôle for our Navy advocate it above all as a weapon to be used against England, on account of her insular position, of the enormous extent of her commerce in every sea, and of the necessity under which she lies of importing so large a quantity of her food supplies and raw material by sea. "Interrupt England's commerce for some weeks," it is said, "and she will be compelled to sue for peace, as otherwise her people will be starved out." And it is concluded that instead of alarming ourselves about the strength of her squadrons, all we have to do is to hamper, interrupt, and destroy, if possible, her commerce.

There is nothing new in these tactics. They have come down to us from the old days of maritime war, when the pillaging of ships was the only object, and every merchant-ship had to carry guns if it wished to escape capture by similar but well-armed ships of the enemy. At all periods of our history corsair warfare has been practised, and that it has been attended by a considerable amount of success in the matter of the capture of booty and destruction of the enemy's ships cannot be denied; but it is well to note that the only times when it was really effective against our own enemies was when our fleets were sufficiently strong to be able to dispute with our foes the mastery of the Channel or Mediterranean.

¹ "Le Programme Maritime de 1900-1906. Par J. L. de Lanessan, Député, Ancien Ministre de la Marine. 2nd Edition. Paris : 1903.

Corsair warfare was carried out for the first time in a systematic fashion by our Navy, after the battle off the Isle of Wight, on the 30th June, 1690, and the burning of fifteen of our ships in the harbours of Cherbourg and La Hogue. It was then that De Tourville, instead of offering battle to the combined English and Dutch fleets, which were cruising at the entrance to the Channel and off the coast of Normandy, hurled himself instead on a fleet of 140 merchantmen proceeding from England to the Levant, convoyed by 27 ships of war, beat the escorting squadron, and burnt or captured the largest part of the convoy. It was also about this period that strong divisions of war-ships, commanded by Jean Bart, Duguay Trouin, Forbin, and other enterprising officers, ravaged the coasts of Spain, attempted landings in Scotland and Ireland, plundered and destroyed merchantmen—made, in a word, a determined attack in European waters on the commerce of England, Spain, and Holland, inflicting very considerable losses upon those countries.

It was, on the other hand, a time when enterprising shipowners, encouraged by Ponchartrain, and led away by the hope of great gains from pillaging merchant-ships, manned privateers, under sanction of the Admiralty, with crews equally eager to enrich themselves, on condition of a certain portion of the booty being paid in to the Royal Treasury.

From that time it was not the French Navy which made war on the English Navy, but the business men who attempted to enrich themselves, and who often succeeded in doing so, at the expense of the shipowners and the mercantile community of Great Britain.

There is no doubt that these operations were successful, for the fact is admitted even by English writers:—"It is certain," wrote Campbell, "that we have suffered infinitely more, not only than the French, for that was only to be expected considering the large number of our merchant-ships, but more than in any previous war. Our trade has suffered heavy losses; many of our merchants have been ruined." Macaulay wrote:—"A merchantman from London or Amsterdam, unless she was protected by one of our ships, had no chance of reaching the Pillars of Hercules, without being attacked by a French corsair, and it was not easy to obtain the protection of armed vessels."

These last words give us the secret of the success of corsair warfare at the period of which we are speaking. The English and Dutch fleets did not dare to leave the Channel for fear of the operations which we might carry out against Ireland and Scotland in their absence. In spite of the defeat we suffered at the battle of Beachy Head, and the burning of La Hogue and Cherbourg, we were able on the morrow of these disasters to send to sea a fleet of eighty sail, while the combined English and Dutch only numbered 115. We were still sufficiently strong to dispute the mastery of the Channel with our enemies, and they were afraid to denude their coast of ships in order to protect their trade. In 1697-1698, the eve of the signing of the Treaty of Ryswick, one of our squadrons had blockaded Carthage, taken possession of the forts, and had placed the city under ransom, reaping a rich booty, as much of the rich merchandise from the Spanish Colonies was stored there; at the same time D'Estrées had similarly laid Barcelona under contribution. All naval historians are agreed that if during this war against the League of Augsburg, the war of Catholicism against Protestantism, corsair warfare proved very profitable to us, it

was only because our squadrons were so strong that the enemy were unable to detach sufficient ships to protect their commerce.

The war of the Spanish Succession (1698-1715) provides a second interesting phase of corsair warfare. At first we gained by it in every way, because our fleets were strong. The defeat sustained at Vigo in 1702 by Châteaurenault, it was true, caused us and Spain, our only ally, some heavy losses, but we remained for some years strong enough to protect our own trade, whilst our corsairs were able to seriously harass that of our enemies. And this lasted up to the capture of Gibraltar by the English, August, 1704. Then, as the result of the defeats we sustained, first off Malaga, where the Count of Toulouse proved himself so incapable a commander, and again before Gibraltar, in 1705, coupled with the want of money, the result of the misfortunes to our arms on the Continent, we found ourselves unable to maintain any longer a fleet worthy of the name. Our corsairs still left our ports, commanded by the same men as formerly, and they achieved a certain measure of success against English commerce; but our general situation being changed so much for the worse, the economical and political results from this warfare were quite insignificant. And although a number of English and Dutch merchantmen were captured, a still larger number escaped, thanks to the protection afforded them by their war-ships, and the general good fortune of England, so far from being diminished, rose to a height which it had never before reached. "Everything considered," wrote Campbell, "the national credit was never so high, nor the spirit of enterprise so developed as at this period. Our trade increased to a greater extent than it had fallen off during the last war."

With regard to the political results produced by corsair war during that war, they were *nil*, as far as we can form an opinion. England, as a matter of fact, despoiled Holland of the little trade that had been left to her; she became mistress of Gibraltar and Port Mahon, for the possession of which our fleets could no longer dispute with her, while in America she seized Nova Scotia and Newfoundland. With regard to us, in spite of the laurels won by Duguay-Trouin, Forbin, Cassard, and other leaders, we emerged from this long war stripped of all our naval power. "The national object pursued by England in this war," said Campbell, "was in a great measure attained. I mean the destruction of the naval power of France; because after the battle of Malaga she no longer possessed any fighting squadrons, and although the number of her privateers was largely increased, the losses of our merchants were much less under this reign than during the preceding one."

A third phase of corsair warfare presented itself during the Austrian War of Succession (1740-1748). Our Navy at the outbreak of the war was so deplorably weak that we had to give up all idea of holding the sea, and had to confine ourselves to attempting to re-victual our Colonies. We were obliged to be content, as in the previous war, with harrying the enemy's commerce, with the help of our corsairs. We captured numerous English and Spanish merchant-ships, but we only saved our Colonies, thanks to our successes on land, which were secured to us by the Treaty of Aix-la-Chapelle.

During the Seven Years' War (1756-1763), the operations of our corsairs were highly profitable—profitable for them alone, it must be understood—but they did not prevent the loss of the greater part of

our Colonies, and we see England reach, at our expense, the apogee of her naval and colonial power. However, between 1756 and 1763 we captured over 3,300 English merchant-ships, while during the same period we only lost 1,000, and even our losses fell almost exclusively on our privateers. It is true that the English had more than 8,000 merchantmen distributed all over the world, whilst our commerce was at that time at a low ebb. "It is no matter for astonishment," wrote Campbell, "that the French captured a large number of valuable prizes, for whilst their commerce had been nearly totally destroyed, and they had at sea but very few ships, the merchant fleets of England covered the ocean; her commerce increased from year to year, while the products of her industries provided her with the means of maintaining the war." With regard to the effect produced on the conditions of peace by corsair warfare, it is only necessary to note the conditions imposed on France by the Treaty of Paris. During the whole period of the war we were without fleets, and it was to this cause that England owed her naval and diplomatic successes. It would seem that the only result of the captures made by our corsairs was to make the conditions of peace harder for us.

During the American War of Independence (1778-1783), when our reorganised fleets were to be found in every ocean, and held in check everywhere in a certain measure the English squadrons, the success of our corsairs had very different results. "For the first time," said the Annual Register, "English merchantmen had to seek the protection of foreign flags." During the wars of the Revolution, however, although our corsairs captured and destroyed a large number of English merchant-ships (over 2,000 between 1793 and 1797), the political results were almost *nil*, and England, again become mistress of the seas, steadily increased in wealth and power, while France had to see her maritime commerce brought almost to a complete standstill. If England only captured 375 of our ships, whilst we captured 2,226, it was simply because our merchant-ships were very few in number, and scarcely left our ports, the risks being too great for our ship-owners and merchants. We lost our Colonies, while our fleets, deprived of their officers and manned at haphazard, suffered continual defeats.

To resume, every time that our war on commerce has been supported by more or less powerful battle squadrons, we have inflicted very sensible losses on English trade, and these losses have been as much due to the check sustained by her commerce from the feeling of insecurity, as to the actual numbers of ships captured and destroyed. On the other hand, when our fleets, owing to weakness, have been compelled to remain impotent in our ports, while those of England had command of the sea, although our corsairs made many captures, yet her commerce did not suffer materially, because the number of her ships trading in seas where they were practically free from our interference largely increased.

History then leads us to the conclusion, in the first place, that if we wish to pursue corsair warfare with any chance of success, our fleets, to begin with, must be strong enough to dispute the command of the sea with our rivals. Secondly, it is clear that in corsair warfare we must be in a position to capture or destroy so many ships that the enemy's commerce will be paralysed by the general feeling of insecurity which will be engendered. From this point of view the con-

ditions under which we can wage a corsair warfare to-day are completely different from those under which in former days we used to practise it. It was in those days, in a great measure, only a war of pillage, whether it was carried on by regularly commissioned ships of war or by privateers, and for various reasons the latter found it a very profitable and pleasing occupation, and generally succeeded in evading pursuit. Occasionally some of course were captured, and their crews were treated with but scant ceremony; still, the chances of gain were so great as to make it quite worth while to run the risks. Thus privateering found much favour among adventurers, shipowners, and seamen generally, and certain of our coast towns made their fortunes while the country itself was almost ruined by the ill-luck which attended it in the actual operations of the war itself. It was moreover much more difficult to protect merchantmen in the old sailing days than it will be to protect them now. Steam has much simplified matters, and merchant steamers bound to the same ports follow the same routes with a regularity which will greatly facilitate the formation of convoys, and their protection by war-ships, which should be able to police the ocean highway tracks as easily as the principal roads on land are under the surveillance of the Gendarmerie. Every corsair which to-day sets out to hunt down merchant-ships must be prepared to fight, and corsair war will thus become war in earnest.

On the other hand, the Declaration of Paris¹ of 16th April, 1856, has suppressed privateering; Letters of Marque can no longer be issued; ships of war alone have the right to capture an enemy's merchant-ships, and even this right has been hampered in its exercise by obligations which render it difficult as well as dangerous.

A ship of war which meets a merchant-vessel suspected of belonging to the enemy can no longer, as formerly, seize her off-hand. She must give orders for her to bring to, when an officer must be sent on board to inspect her papers, and assure himself as to her nationality, and that of her crew and cargo, and she can then only be seized if it is shown that ship and cargo belong to the enemy. If the cargo belongs to neutrals it cannot be touched, even if the ship is flying the enemy's flag; nor can it be touched even if it belongs to the enemy so long as it is being carried under a neutral flag, provided, of course, that it is not contraband of war.

We probably shall not be exaggerating if we put down the length of time necessary for such a visit of inspection at an hour at least, and it might quite well happen that before the inspection was finished it might be interrupted by the appearance on the scene of faster, stronger, and better protected cruisers of the enemy. These practical difficulties are recognised by those who advocate a corsair warfare, and in order to get over them they propose to do away with the visit of inspection. Every merchant-ship met by one of our cruisers, de-

¹ The terms of the Declaration are as follows:—Privateering is and remains abolished. 2. The neutral flag covers enemy's merchandise, with the exception of contraband of war. 3. Neutral merchandise carried in an enemy's ship cannot be seized, unless it is contraband of war. 4. A blockade to be recognised must be effective, that is to say, it must be maintained by a force sufficiently strong to really prevent access to the enemy's coast.

stroyers, or torpedo-boat is to be summoned to stop, and without distinction of nationality be ordered to follow immediately to the nearest French port, on pain of being sunk if compliance is refused. Once arrived, the visit of inspection prescribed by the Declaration of Paris would be carried out, and she would be treated in accordance with her nationality, and that of her cargo and its nature. We should be exposed of course to the risk of having to pay heavy indemnities to neutrals, but we should avoid the difficulties attending the searching of a ship on the high seas.

There is a certain plausibility in these arguments, but their weakness is evident. We may be permitted to doubt, in the first place, whether any sensible Government would authorise this method of procedure, as it would certainly expose itself to the ill-will and perhaps to the open hostility of neutrals, hurt in their commercial interests, and wounded in their dignity. On the other hand, to carry a ship into a French port, under the threat of sinking her at the least sign of hesitation, would only be possible if the sea were free, and if the approaches to the port where it was proposed to take the captured ship were also quite free from the presence of hostile ships. But with the development which has taken place in the fleets of our possible enemies it is extremely unlikely that the approaches to our harbours will in time of war be left thus free.

Whatever may be the means adopted in corsair warfare, whether a ship is searched on the high seas or brought into port for the purpose, there are certain inherent difficulties to be faced in either case. If the operations are to be successful, it can only be by a combination of favourable circumstances, which will not often be met with.

It is self-evident, in the first place, that nothing can be done if the merchantman is protected by a war-vessel stronger than the corsair; and next, that the sea should be clear in the vicinity of the harbour to which the ship is to be taken. In the days of sailing ships it was relatively easy to realise these conditions, owing to the numerous chances afforded by the caprices of wind and weather, the ships of a blockading squadron in particular being constantly liable to be driven off by changes of weather. But this is no longer the case since steam came in, and a powerful maritime Power, supplied with numerous cruisers and strong battle squadrons, would not experience very great difficulty in convoying her merchant-ships, and blockading more or less closely the enemy's ports. Difficult to capture in face of the protection afforded them, it will be still more difficult to get them safely into port when they are seized.

There are some people who advocate the taking out of captured ships the crews and the valuable or useful part of the cargo, such as coal, and then sinking them. It would be a better plan, certainly, than running the risks incidental to attempting to take the ship into port; but if two, three, or four ships are captured in succession, what is to become of the cargoes and crews? There are those who reply to this, that in order to avoid all embarrassment our cruisers ought to sink at once the ship, crew, and cargo. It would be an expeditious and sure way, certainly, and torpedo-boats, destroyers, and even submarines might be employed in the work instead of cruisers; but these people forget to what terrible reprisals the country would expose itself! Where are the commanders of our cruisers, destroyers, etc., who would,

except under the most imperative orders, consent to do such dreadful work? Where is the minister with so little regard for the honour and interest of his country who would give such orders?¹

¹ Our naval rivals have considered all the eventualities mentioned above, in regard to employing destroyers and torpedo-boats for chasing merchant-ships, with orders to sink them if they resist the order to follow into harbour. In his very interesting essay on the Protection of Commerce in War, Commander Ballard writes:—"A war conducted with the avowed purpose of destroying peaceful trade would be animated by the extremely bitter feeling which always accompanies more or less irregular operations.

It seems logical to admit the right of the torpedo-boat to use her weapon if the cruiser may use hers, the gun, when endeavouring to force an escaping ship to bring to, each looking to the weapon as the ultimate means of attaining her object, and, indeed, the weapon is for both the real *raison d'être* of the vessel. The enemy, most likely exasperated and vindictive by the defeat of their battle fleets, which must be preliminary to this kind of work, would be greedy for vengeance, and would not allow themselves to be influenced by considerations of humanity, if they chanced to interfere with the accomplishment of their designs. Such a state of things will naturally breed a spirit of retaliation. It seems also not unlikely that when affairs had reached this stage, the territorial waters of countries, too weak to assert their rights by force, would be little respected by either party, and that an enemy under the influence of these sentiments would be ready to face considerable losses in the attempt to execute their projects, especially if the moving spirits were not the personal sufferers, for it is scarcely necessary to say that history is replete with cases in which the popular voice has forced the undertaking of operations which were contrary to the ideas of those upon whom devolved the duty of carrying them out."

The English writer seems to be glad of the opportunity of warning his compatriots of the attacks to which their merchant-ships may be exposed on the part of an enemy desirous of revenging himself for the impotence or defeat of his squadrons. He lets it be understood clearly that such attacks would be followed by reprisals, but he also points out clearly the difficulties which such attempts would meet with in narrow seas, like the Channel and Mediterranean, where alone torpedo-boats or destroyers would be able to engage in such operations. He shows with what ease a naval Power, with so numerous a fleet of all sorts of vessels as Great Britain possesses, can protect her merchantmen. During the day corsair operations, even those carried out in the most expeditious and brutal methods, will have little result where there is a methodical surveillance. Destroyers and torpedo-boats, which are defenceless against the English cruisers, could only attempt to act during the night, that is to say, under conditions when it will be "extremely difficult to distinguish belligerents from neutrals," because "merchant-ships of all countries bear a close resemblance to each other, owing to so many of them having been built in English yards. This fact alone will by itself be an obstacle capable of disconcerting our adversaries."

With regard to commerce-destroyers, Commander Ballard thinks it may be assumed that such a vessel would do the greatest amount of damage on one of the great ocean routes, particularly those from Europe to the United States or Canada, to the West Indies, the South-East Coast of America, and round the Cape of Good Hope. Putting aside the question of convoys, he considers:—"There exist two methods of guarding against the

For the rest, how will a cruiser or torpedo-boat, bent on acting with rigour and promptitude, distinguish a neutral ship which refuses to haul down her flag from a ship of a belligerent? And is it not clear what muddles may ensue?

Let us put on one side, then, the more or less Utopian systems, which are advocated by people who are blinded by the one desire of doing the enemy as much harm as possible, and do not let us deceive ourselves as to the effect which commerce-destroying will have in a war with such and such a Power, nor as to the means which it will be possible to employ in order to destroy such commerce. Let us keep commerce-destroying before our minds, but let us take care that whatever is done must be done as part of the operations of regular war, and not as acts of banditism, which are not permitted by the usages of war in the present day, and are moreover rendered impossible by the present conditions of naval war, and by the formidable fleets of those nations against whom it is proposed to attempt to carry out a system of corsair warfare.

We believe that with real mobile divisions of powerful, fast armoured cruisers, very considerable mischief could be done to the sea-borne trade of Germany or England; but it is probable that more mischief would result from the dislocation and stoppage of trade due to a general feeling of insecurity than from the actual capture or destruction of merchantmen.

There is no doubt that the mere menace of commerce-destroying would send insurance and freights up rapidly to a very high point. Will, therefore, this increase in freights be sufficient to put a stop to the conveyance of raw materials, food, etc.? It is impossible to give either an affirmative or negative answer to this question, because the effect produced by the menace of our cruisers would only last if these menaces were followed by serious results. But nobody can ignore the fact that England, in particular, has prepared a long arm for the protection of her trade, not only by means of her cruisers, but by all the indirect means which law and international customs place at her disposal, such as neutralisation of her ships and cargoes.

It is true, the adoption of the last-mentioned procedure would be attended by a certain amount of danger. Great Britain would run the risk of seeing neutrals take her place on some of the trade routes, but this danger would only become a serious one if war were prolonged over several months.

operations of commerce-destroyers: 1. To patrol the principal commercial routes by cruisers sufficiently powerful to be a match for any of the enemy's cruisers, or even a small squadron. 2. To make the necessary preparations so that a certain number of our cruisers should always be ready to track each of the enemy's ships individually, and not to rest until she is brought to action."

To resume, corsair warfare will not take England unawares; she has made her preparations in view of such an eventuality, and it is not with corsairs having speed as their sole protection that she will enter on it. Corsair-war against English sea-borne trade will be, we are plainly warned, regular war. And it is this point of view that we must keep before ourselves in our preparations if we do not wish to be the dupes of the dangerous delusions held by so many of those who advocate it.

But if we have not got powerful squadrons to oppose to hers in European waters whilst our cruisers are hunting down her merchantmen in distant seas, our corsair war will be neither of long duration nor of profit to us. After the enemy has destroyed our squadrons, bombarded our towns, menaced our nearest and most useful Colonies, set foot, perhaps, on those points of our Mediterranean possessions which are incapable in the actual condition of things of defending themselves, it will not be the success of some cruisers on the great ocean trade routes which will enable us to continue the struggle.

In order that commerce-destroying may be useful to us, it is necessary to look at it not simply as a hunting down of merchantmen with the sole object of capturing or destroying them; but as a real war against cruisers charged with the duty of protecting the enemy's commerce in different seas, and as a strategic means to compel our rivals to disperse their ships over the world, so as to lessen the difference in strength which exists between their forces and ours in European waters.

Again, therefore, we are brought back to the point that we must construct, not only powerful first-class battle-ships, but at the same time very powerful, well-protected, and fast cruisers, because on each of these classes of large ships devolves, in addition to their special work, the duty of assisting each other, complementing and forming one whole, without which our Navy will be incomplete.

CHAPTER VI.

TORPEDO-BOATS, DESTROYERS, AND SUBMARINES.

In order that our fleet may be harmonic and respond to all the needs of the country, it is necessary to add the other classes of ships of which we have not yet spoken, viz., torpedo-vessels and submarines; that is to say, those vessels, whose only or principal arm is the torpedo, and to which we must also add the class which has been specially designed to hunt them down, viz., the destroyers.

We ought really to take these latter first, because their special arm is the gun rather than the torpedo; quick-firing guns of small calibre, as they are the most suitable in chasing torpedo-boats or submarines, since their hulls are easily vulnerable, and their crews for the most on deck with no protection. But destroyers having been designed in view of the destruction of torpedo-boats, we will trace, in the first place, the causes which brought about the construction of these last, and then the rôle for which they are best fitted in naval war. We shall then be able to study with more profit the vessels which have been constructed in order to destroy them, and we shall see that destroyers are destined, certainly in French opinion, to themselves play, in certain cases, the rôle of torpedo-boats.

THE ORIGIN OF TORPEDO-BOATS.

Torpedo-boats arose under conditions which it may be useful to recall. Some fifteen years ago some friends of the late Admiral Aube, greatly exaggerating his ideas, formed the project of doing away with all the large units of our fleet and of replacing them by as small vessels as possible, each of which should be armed with only one weapon

of offence, while their protection should be their small hulls and the high speed which it was proposed to give them.

Applying to the vessels the principle of the division of work, the arming of ships, battle-ships for instance, with three weapons, the gun, torpedo, and ram, was condemned; and the construction of small ships demanded, each of which should be armed exclusively either with torpedoes, a gun, or a ram. Some attempts were made to build gun-boats which should carry a very heavy gun; but they have not come to anything. Next vessels built solely for ramming were tried; but the greatest measure of success has been reached in the torpedo-boat.¹

THE EVOLUTION OF TORPEDO-BOATS.

Conformably to the principle which governs these theories, the first torpedo-boats were built as small as possible; their displacement was

¹Nobody has better set forth this theory than the late M. Gabriel Charmes in the preface to his work, "The Reform of the Navy," published in 1886:—"The actual organisation of the naval forces of the great European Powers rests," he wrote, "on a false and dangerous principle—the principle of concentrating in one ship all the different weapons of offence. It is against this principle that I have set myself; it is this principle which I have attacked, not, as is believed, in favour of the torpedo alone, but of an opposite principle which has for some time past succeeded in the Army, and which ought to succeed in the Navy, that is, the principle of the division of work. The problem which I have put, and which I have essayed to solve, is not exclusively that of knowing if the torpedo-boat will sink the battle-ship or the battle-ship successfully resist the torpedo-boat. Whatever may be the gravity of the last problem, whatever may be its consequences, there is another problem which seems to me to be even more important, and it is this: Is it better to continue to construct giant ships, more or less armoured, on which we accumulate the means of attack and defence which can only develop to the detriment of one or the other, or is it not better to devote to each arm a special ship, which will allow of the greatest efficiency of each particular arm being secured? The speed of the large ships will always be inferior; but speed has become the most important quality of ships of war. Will it not be better to replace the defensive power, which at present is found only in battle-ships, by a number of vessels with a great superiority in speed, whose relative invulnerability will be obtained by means of their small dimensions? Substitute for the battle-ship—an essentially complex vessel, very costly, and possessing only a moderate speed—a great number of special vessels, gun-boats, rams, cruisers, etc., giving them (each constructed for one single duty) the highest speed possible; in a word, divide the work. Of a truth, the realisation of a programme, theoretically excellent, at one time seemed very difficult. But the great merit of the torpedo is the having, on the contrary, made it easy to do what is necessary. Thanks to that new arm we are able to-day to secure an absolute defence of our shores by small, light, very fast vessels at a small cost. We are also able with the same vessels of a somewhat larger type to attack battle-ship squadrons, and force them to keep their distance from the coast. Numbers and speed will constitute the offensive power of these vessels, their defensive power being speed and small dimensions."

only some thirty tons, and their speed 19 knots, which was then considered very fast, and their sole weapon was a torpedo carried at the end of a spar, which it was intended to direct against the side of an enemy's ship. It was in this way that at the attack on the Chinese vessels at Foochow, one of them was sunk.

Somewhat later the autonomous fish torpedo was invented, which was discharged from a tube by means of compressed air. The first torpedo-boats built to carry the new weapon were still very small, their displacement was not much over fifty tons, and their speed some 20 knots. It was, however, soon recognised that this speed could not be maintained even in a slight sea, owing to the smallness of the vessels, so the displacement soon rose to eighty tons, the speed to 24 knots, while the armament was increased to four torpedoes; some small quick-firing guns were next added, and we had the first-class torpedo-boat, which our officers considered as the best adapted for the defence of our harbours and coasts. At the same time, a special class of small torpedo-boats were constructed, which could be carried on board ships for use in general actions. In the French Navy this has never found much favour, although in Germany all battle-ships carry one of these boats, a practice which cumber the ship's deck without being of much use. Sea-going torpedo-boats of some one hundred and fifty tons displacement, however, have been built now for many years, which are able to accompany our squadrons to sea, and which in fine weather have a speed of some 26 knots.

The Superior Council of the Navy has recently limited the types of torpedo-boats to two only, viz., the first-class torpedo-boat with a displacement of some eighty-five tons for coast defence, and the so-called "squadron torpedo-boat," with a displacement of one hundred and fifty tons.

THE FIGHTING RÔLE OF TORPEDO-BOATS.

The fighting rôle of torpedo-boats is indicated by the weapon of offence with which they are armed. Whether they remain attached to a port or accompany the sea-going squadrons, their duty is always the same, to attack the enemy's large ships, whether battle-ships or cruisers, and, if possible, sink them. As torpedoes are regulated to run some nine feet below the surface, they can do no harm to ships drawing less water. It is for this reason that the torpedo-boat destroyers are built with a very small draught of water, while torpedo-boats rarely draw more than six feet, so that they can secrete themselves easily along the coast out of reach and sight of an enemy, and yet be in a position to make a sudden attack if an opportunity offers.

No attack can be attended with much chance of success at over 1,500 yards, which is at present the furthest range at which a torpedo can be depended upon for striking effectively the target at which it is aimed, so the tactics of the torpedo-boats of the *Défense-Mobile* are clearly indicated. If they attempt to act during the day, they will certainly be sunk before they are able to get within striking distance of the enemy; they can therefore only operate during the night, and then only when it is sufficiently dark, so that their presence shall not be betrayed.

Having no other means of defence than their invisibility due to their small dimensions, and not being able, owing to their lowness in

the water, to make out large ships much before they are themselves seen, they have to take the greatest precautions to avoid discovery. They must, for instance, guard against flames issuing from their funnels when they burn ordinary coal, because such flames would betray their presence even when a long way off. So that in time of war it is necessary that they should be supplied with special coal, and even then no attack should be attempted, except during the intervals in stoking.

The necessity of only operating during the night handicaps torpedo-boats tremendously. If the darkness permits them in a certain measure to escape discovery by the enemy they are in search of, it, on the other hand, considerably increases the natural difficulty they will themselves have in sighting ships at any distance, in making out their nationality, and even of making certain of the course they are steering. This difficulty is so generally recognised and so serious a one, that it has been found necessary to take steps to remedy it. It is with this object that torpedo-boats have been grouped either in twos, always steaming together, or in divisions of four or five, placed under the orders of a vessel higher out of the water, and with a consequent somewhat further range of vision, which is better able to play the rôle of guide.

The leader of the group does the searching of the horizon for its little flotilla, brings it within striking distance of the enemy, and indicates the moment when the boats should launch their torpedoes, as she is in the best position for judging distances. This rôle of chief of a group of torpedo-boats is sometimes played by small cruisers, sometimes by destroyers. These last would seem better adapted for the duty, because they have a speed at least equal to that of the fastest torpedo-boats, and they can also, on occasions, play the part of torpedo-boat themselves.

The rôle of the squadron torpedo-boats is different from that of the purely defence ones. While these last remain attached to a certain part of the coast, which they have to watch carefully and continuously against attempts by the enemy, the squadron torpedo-boats keep company with the large ships, and should be always ready to assist in their operations against the enemy, and during the night would attempt attacks on the enemy's ships on their own account; during the day they would steam under shelter of the battle-ships, ready to seize any opportunity afforded by smoke, fog, or the disorder of the enemy, to take part in battle. It is only right to say that there are officers who look with but little favour on this class of torpedo-boats, and consider them more as a drag on the squadrons than as useful auxiliaries; they complain that even when the weather is only slightly rough these boats find it difficult to keep the sea, that their breakdowns are far too frequent, that they are constantly obliged to renew their supplies of coal and water, etc.; in a word, that they are not fit for lengthy cruising, and are only a nuisance to the squadrons.

Whilst seeking methods by which torpedo-boats can be most usefully employed, we are naturally also led to consider how best large ships can guard themselves against their attacks. The first thing is to keep the torpedo from touching the hull of the ship; and for this purpose the steel nets, invented by Mr. Bullivant, which are suspended round the ship by means of booms, and hang some feet down in the water, are extensively used. The French Navy seems to have given their use up, but not so the English. On the contrary, great pains have been taken recently to improve the nets, and those now in use

seem impervious to the attack of the torpedo. In our Navy the custom has grown up of protecting ships at anchor by booms which surround them and check both torpedo-boats and torpedoes. This method of closing the entrance to harbours sheltering war-ships is now adopted by every country. Then we strive to protect large ships against the effect of torpedoes by dividing the lower part of the hull into a vast number of compartments, and by other methods, the value of which has not yet been really tested. Perhaps the best defence against torpedoes is keeping ships under way, which makes it much more difficult to aim torpedoes successfully.

Then the electric search-lights are a means of protection of another kind. Since torpedo-boats can only act at night, it is necessary to turn night into day, and the powerful lights which ships now carry enable them to detect torpedo-boats at a considerable distance. It is true that the light reveals the presence of the ship which uses it, and serves as a guide to the torpedo-boats; but, on the other hand, when these lights are turned full on another vessel, it blinds those on board, and it becomes impossible to steer her accurately. If ships are steaming without lights, again, especially if the nights are dark, owing to their height about the water, they can detect the presence of torpedo-boats far more easily than they can be detected themselves by their small foes.

In bad weather, also, torpedo-boats knock about very badly, their speed falls off tremendously, and they are often unable to discharge their torpedoes. They can then be captured or destroyed by the battle-ships and cruisers without any risks to themselves. We could mention more than one instance during our Naval Manœuvres in which all the torpedo-boats of one of the *Défenses-Mobiles* were captured, owing to the weather—those at sea by the battle-ships, the others in their harbours of refuge by a force landed from the fleet. The first were quite helpless in the sea-way, and were unable to discharge their torpedoes; the second were prevented by the weather from leaving the harbour and escaping; and during this time the battle-ships and cruisers were able, in spite of wind and sea, to carry out all the duties on which they had been ordered.

Condemned by the nature of their construction and by the short range of the weapon of offence they carry, the squadron torpedo-boats, like those of the *Défenses-Mobiles* ought to be handled in accordance with a specially planned system of tactics.

Those which are attached to the squadrons should remain during the day under shelter of the battle-ships or cruisers. During the night they ought not to cruise far from the ships. In the case of a general action, they will only move if the smoke or disorder of the enemy permit them to act with some prospect of success. Perhaps it would be better even if they were reserved until the close of the action, when the large ships will have expended their ammunition, or when their crews may have become demoralised and unable to open fire accurately upon such small vessels moving at a high rate of speed.

With regard to the coast *Défenses-Mobiles*, they should be distributed, not only between the large naval and commercial ports in order to protect the approaches, but as many as possible should also be sent to the smaller harbours. They should be organised in groups of five or six under the leadership of a larger vessel, a good steamer, sufficiently high out of the water to serve as a guide to them and

sufficiently well-armed to be able to destroy any destroyers which might threaten them. They must acquire by continuous practice so perfect a knowledge of all the coast, to which they are assigned, that they may be able to enter the smallest harbours and creeks, as well by night as by day, and they must be frequently exercised in night attacks against ships which are passing or approaching the coast.

We had actually in 1902 on service 109 first-class torpedo-boats and 10 squadron torpedo-boats. We have under construction 23 first-class torpedo-boats and 9 squadron-boats. In 1907 we shall have about 274 first-class and 30 squadron boats, if we do not give up the construction of the latter.

ORIGIN AND CHARACTERISTICS OF DESTROYERS.

Torpedo-boat destroyers were first conceived in England. The English Admiralty has only built a small number of torpedo-boats, and it seems to have completely given them up, just as it has up till to-day neglected to build submarines.

As a general rule, the English Admiralty neglects defensive instruments, in order to devote all its efforts and its budgetary resources to the creation of offensive weapons. It is in this spirit that the destroyers were conceived. Given a speed superior to that of the torpedo-boats, dimensions which enable them to keep the sea when the latter are helpless, with an armament sufficient to pierce their hulls, the English destroyers are destined to give chase to torpedo-boats everywhere where they may make an appearance, whether in company of the squadrons, or off the ports and along the coasts.

The latest English destroyers have a displacement of some 400 tons, with a nominal speed of 29 or 30 knots, which corresponds to a real speed on trial of about 28 knots, and they are armed with 12-pounder quick-firing guns. England possesses nearly 200 of them, and she counts on them to protect her squadrons against our torpedo-boats.

Following the example of the English Admiralty, we have been constructing for some years now destroyers somewhat similar to hers in speed and armament, but of less tonnage (not exceeding 305 tons), of greater strength of build, and more easily handled. Like her we have armed these vessels with guns which will pierce the hulls of torpedo-boats and destroyers as well; but we count, moreover, on making our destroyers, under certain circumstances, play the part of squadron torpedo-boats. They can do this quite well, owing to the ease with which they can be handled, and because the lowness of their hulls in the water render them almost invisible at night.

The commanders of our squadrons are unanimous in praising their behaviour at sea and their handiness. So the technical authorities have refused to increase their tonnage or make modifications in their principal characteristics, and they consider them quite capable of holding their own against either the English or German destroyers.

THE FIGHTING RÔLE OF DESTROYERS.

The destroyers are intended primarily to accompany the battle fleets, over which they are to keep continuous guard in order to ward off the enemy's torpedo-boats or destroyers.

They can also be employed usefully as leaders of groups of defensive or offensive torpedo-boats.

They will be all the more useful in proportion to their numbers, and they should be distributed like the torpedo-boats, over a considerable number of the points of our coasts.

We had in 1902 eight fast destroyers in service, of about 300 tons displacement, 14 building, and we shall have 60 after the completion of the new programme.

SUBMARINES AND SUBMERSIBLES.

The French Navy is able to claim the credit of having been the first to construct submarines of real value and also of having taken the lead in making a profound study of this class of vessel, and of making use of them on a large scale for fighting purposes. Submarines are called upon to play two quite distinct fighting rôles:—1. To protect our harbours and coasts against attempts on the part of hostile fleets, by keeping the enemy as far out as possible at sea. 2. To attack the enemy at long distances at sea from the land, and even to menace his own coasts, and the entrance to or even within his harbours themselves.

These two classes of submarines would be classified as "defensive" and "offensive" respectively; but in reality the only difference which exists between them lies in the more or less considerable development of the motive power with which they are provided, and their ability to remain at sea for a more or less prolonged period from their home port. Thus we name those submarines as "autonomous," which, being able from their own resources to renew their motive energy, can go for considerable distances, in contradistinction to the other class, which are unable themselves to renew their motive force. From another point of view, of course, there is no great difference between them, because there always comes a time when the "autonomous" submarine must also return to harbour to replenish her fuel. One would not call a submarine, for instance, autonomous if her motive force resides exclusively in electric accumulators, which must be recharged either from a station on shore or by a large ship. When the energy of her accumulators is exhausted, the submarine is of course reduced to impotence. If, on the contrary, she is fitted with machinery by which she can herself recharge her accumulators, she is called "autonomous"; but even for her the time will come when she must return to harbour to renew her exhausted supply of petrol.

Nevertheless, the "autonomous" submarine can more easily play an "offensive" rôle than the other, because it can go further and is less tied to its base; and this will be the case even if its motive power is produced directly by a petrol motor, if its dimensions permit of its carrying a considerable supply of that combustible.

The attempt has been made to render submarines "autonomous," by giving them the power to navigate on the surface of the water like ordinary vessels and by the same methods, only becoming submarines at the moment when it is necessary to avoid a danger, or to attack one of the enemy's large ships. "Submersibles" is the name given to this type of vessel, in order to indicate clearly that submersion represents only one limited side of their *raison d'être*, navigating on the surface being their normal condition.

As opposed to "submersibles," one has to count as submarines "proper" those vessels which navigate either below the surface of the sea, or when immersed to their proper bearings are almost entirely covered by the water. It is scarcely necessary to point out that, thanks to this arrangement, the true "submarines" will dive more rapidly than the "submersible."

There are, therefore, strong reasons for the "submersible" being provided with two distinct motors, the one for use when moving on the surface, and the other when it is necessary to submerge itself. Some experts hold that "submersibles" ought to be provided, as far as possible, with only one motor, in order to do away with the length of time necessary to change from one mode of progression to the other; but serious arguments can be urged against this conclusion.

Finally, whatever may be the nature of the submarine, it can only be considered a serious fighting weapon if it is capable of remaining under water sufficiently long, or of moving below the surface long enough, to make sure of evading being sighted by the enemy. That is to say, that all "submarines" or "submersibles" must be capable of remaining below the surface throughout the longest day, that is, some sixteen or eighteen hours.

Such are the problems which the submarines have to solve, and we may say at once that both in France and abroad these problems are in a fair way of being solved, and that even now the submarine is an instrument of battle of undoubted value.

But when we have admitted that, we have also to admit that the submarine has its defects. In the first place, like the torpedo-boat, it is only provided with one short-range weapon, the torpedo; again, like the torpedo-boat, it can only carry a very small number of torpedoes, three or four at most, even if its dimensions are fairly large, three or four hundred tons for instance, which are considerable for a vessel which requires to manœuvre with great rapidity.¹

In the second place, it is as difficult for a submarine, as for a torpedo-boat, to discharge its torpedo under such conditions as to make its striking its object a fair certainty. It is necessary that the discharge should be effected from a determined-on position, at a convenient distance, at a moment favourable for the movement of the torpedo, combined with that of the ship to be struck, so that the torpedo should strike her fair on the side, and not pass ahead or astern of her. But the submarine can only see by means of an instrument of which the field of vision is as limited as the sea is extensive, and which runs the risk of being obscured by the spray from the waves just at the moment when it may be necessary that it should be most clear. In fact, one may say of a submarine that if it is more invisible than a

¹The following table shows how necessary it is that submarines should be able to plunge very rapidly, for as soon as they are sighted by a fast destroyer they are in danger. A destroyer which steams :—

30 knots makes	...	...	926 yards per minute.
25 " " "	...	...	771 " " "
20 " " "	...	...	617 " " "
18 " " "	...	...	556 " " "
15 " " "	...	...	463 " " "
12 " " "	...	...	370 " " "
10 " " "	...	...	309 " " "

torpedo-boat, on the other hand, its field of vision is less extensive and much less sure.

In spite of these defects, the submarine is, without doubt, a more redoubtable fighting instrument than the torpedo-boat; and on the day when it is fully endowed with all the autonomy desirable, we shall have to ask whether it will not be better to increase their numbers in preference to those of the torpedo-boats, at least, where our coast defences are concerned.

For the rest, torpedo-boats and submarines are destined to collaborate during war, the one acting during the night, the other during the day, in such a way as to form in front of our naval and commercial harbours a protective net with the meshes made as small as possible.

Submarines should also be able to give powerful aid to the sea-going torpedo-boats, by combined movements which would throw the enemy's ships in the path of the one, when forced to avoid the other. We are also of opinion that the stations of the *Défenses-Mobiles* should have submarines attached to them as well as torpedo-boats.

In the defensive, as in the offensive, submarines can only render real service if we possess a large number of them. This is necessary not only so as to create on board the enemy's ships a perpetual state of disquiet, but also because they can only keep the sea for a very limited period, two or three days at the most. In order that their action should be continuous, they must be frequently relieved; and it is believed that for each operation three submarines will be necessary, one for action and the other two ready to take her place, turn and turn about.

If we wish to have a large number of submarines or submersibles, it is evident that each unit should cost as little as possible. We shall make a grave blunder if we only build submarines with a considerable radius of action, because it is those which cost the most, and whose actions are perhaps the least certain.

For the defence of our harbours and our coasts, vessels of small dimensions are sufficient, even if they are autonomous, as they are not intended to act far away from their base. And we could then have for the same amount of money double or triple the number which we could obtain, if we wished them to have a large radius of action. In other words, it would seem advantageous both from the naval and also the economical point of view to give our fleet two types of submarines, as we have already two types of torpedo-boats; one of small dimensions, with a restricted sphere of action and a purely defensive rôle; and the other with as large a sphere of action as possible, so that they can take the offensive even on the enemy's coasts.

The first will operate in concert with the torpedo-boats of the *Défense-Mobile*, while the second, in case of necessity, would be able to take part in combined operations with the squadron torpedo-boats or with the destroyers, which they will nearly equal in displacement and radius of action.

The French is the only Navy which possesses at present a considerable number of submarines. We have actually in service the "Gymnote" type, vessels of small dimensions, for defensive purposes only; four of large size, the "Gustave Zédé," "Morse," "Français," and "Algérien," which are also for defensive purposes on account of the nature of their motor system; and five submersibles with two

motors and a large sphere of action, the "Narval" and "Sirène" types. We have besides under construction or completing, four of the "Morse" type modified; twenty autonomous ones of seventy-two tons, and three other large ones also autonomous.

With the credits which Parliament has voted, it will be possible to construct, on the one hand, a number of defensive submarines sufficient for our needs, and, on the other hand, submarines or submersibles with a large radius of action, in sufficient numbers to inspire real disquiet among our eventual enemies, especially if the experiments which are at present being carried out by our fleet give the results which we have every reason to expect they will.

(To be continued.)

THE ALLOTMENT OF THE REGULAR COMBATANT UNITS OF THE HOME ESTABLISHMENT TO THEIR DUTIES IN WAR, AND STATIONS IN PEACE, ETC.

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DECEMBER is once more upon us, that month in which the military authorities commence to consider what the establishment of our Regular forces is to be for the following year, and the rôle of the units forming the Regular home establishment on mobilisation.

Recent events have tended to disturb the even tenour of the Army Corps scheme of re-organisation. I refer to the cold wind that is now blowing (after the hot wind following the war) on the opinion of the British public, and the consequent disinclination to spend money on the Army; the determination of the Cabinet to maintain a force of 25,000 men in South Africa; a generally accepted idea that to concentrate on Salisbury Plain, in permanent barracks, as large a force as was originally intended, would be, for reasons unnecessary to go into here, a mistake; and lastly, above all, a final conviction that although there is not much difficulty in obtaining recruits for the cavalry and artillery, for the infantry—the principal arm—we have reached bed-rock, and must reduce 2 battalions of Guards.

Now, let us consider first what the establishments of the three arms will be at Home in the ordinary course of events, on the 31st March, 1904, on the conclusion of the present trooping season, putting aside all impracticable schemes for the formation of a National Army—that dream of enthusiasts. On the reduction of the Army in South Africa to practically 2 brigades of cavalry with its 2 batteries of Royal Horse Artillery, and 4 brigades of infantry each with its brigade of Royal Field Artillery, our strength at Home for the Field Army would appear to comprise:—12 regiments of Line and 3 of Household Cavalry, 15 batteries of Royal Horse Artillery, 31 brigades of Royal Field Artillery, 8 Heavy and Siege Artillery companies, and 76 battalions of infantry, from the ranks of the latter of which, are drawn 1 battalion of mounted infantry under instruction in each of the first three army corps. With these units, we have to provide a sufficient “stiffening” for certain army corps for Home defence, mainly composed of auxiliary forces, after our expeditionary army has left these shores, and to quarter in peace for local reasons; barracks, and otherwise; our infantry in certain stations, frequently somewhat remote from the headquarters of the army corps to which they are allotted on mobilisation. The present rôle of the IIIrd Army Corps has never been quite clear to the outsider, who assumes naturally that it cannot be the

intention of the authorities in war to denude Ireland of all its Regular troops, as it would be, on the departure of the IIIrd Army Corps abroad as at present constituted. I think it is generally admitted that we want four army corps in Great Britain and Ireland on the despatch of an expeditionary force abroad, and that the "stiffening" of Regular troops in these army corps is dependent on the importance in the scheme of defence of their respective rôles. On the IIIrd and IVth Army Corps, the one in Ireland and the other mainly devoted in war to the defence of London and the south coasts of England generally, would undoubtedly fall the brunt of any attempted invasion of these islands, and so they must receive greater consideration than the Vth and VIth Army Corps, located in the northern half of England and Scotland respectively. In artillery, all the four corps must have a very large proportion of the Regular arm, viz., 50 per cent. of divisional artillery and the whole of the corps artillery. To allow of this, we must provide 16 brigades of Royal Field Artillery, and 6 batteries Royal Horse Artillery. In addition, for the Regular mounted brigades of the IIIrd and IVth Army Corps we must furnish 2 batteries Royal Horse Artillery; but the heavy batteries might all be found by the Volunteer Artillery. As regards cavalry, a brigade for each of the IIIrd and IVth Corps should consist mainly of Regular troops, not necessarily all permanent regiments in peace, but say one or two regiments, leavened by reserve squadrons of the Line cavalry of the expeditionary force, squadrons of Household Cavalry, and specially selected Yeomanry. In the IIIrd Army Corps, the infantry to the amount of 50 per cent. should be Regulars; in the IVth Army Corps as at present, 33 per cent.; and in the Vth and VIth Corps the duties likely to devolve on them do not necessitate a "stiffening" by Regulars. They would probably operate by brigades in certain localities.

Thus, for the four army corps remaining at Home on the despatch of an expeditionary force, we must allot 20 battalions of Regular infantry. It is proposed, therefore of Regular troops to allot for Home defence, 3 cavalry regiments, 9 reserve squadrons (organised in 3 composite regiments), 8 batteries of Royal Horse Artillery, 16 brigades of Royal Field Artillery, 20 battalions of infantry, and 1 mounted infantry battalion. For the 27 fortresses and defended ports, London and the Channel Isles, the garrisons would consist of the Regular Garrison Artillery companies, submarine miners, and certain fortress companies Royal Engineers, and the details of 56 battalions of infantry of the expeditionary force, as "stiffening" to the force of Auxiliary troops told off to these garrisons under the different local defence schemes.

We shall thus have left over of Regular troops, for our expeditionary force for abroad on mobilisation, without touching a unit at a foreign station, 56 battalions of infantry, 12 regiments of cavalry, 7 batteries of Royal Horse Artillery, 15 brigades of Royal Field Artillery, 8 heavy and siege companies, and 2 battalions mounted infantry; or 2 complete army corps, a cavalry division, and a division of all arms for line of communication purposes. In other words, the Ist and IIInd Army Corps, the Ist and (present) 3rd Cavalry Brigades (formed into a division with a battalion of mounted infantry and due proportion of Royal Horse Artillery attached), and the division of all arms, consisting of 2 regiments of cavalry, 1 battalion mounted infantry, 6 battalions of infantry, 1 battalion Royal Horse Artillery, 1 brigade Royal Field Artillery, and 2 heavy batteries Royal Garrison Artillery, the whole of which division, with the exception of the 3 mounted units and Royal Horse Artillery battery, would be on the cadre in peace of the IIIrd Army Corps. The

following tables explain the details of proposed establishments of the whole of the Field Army on mobilisation, with the location of the units in peace.

ORGANISATION OF THE HOME FIELD ARMY.

ALDERSHOT COMMAND.

1st Army Corps and 1st Cavalry Brigade.

a. Three Divisions—Six Brigades.

		Peace Stations.
1st Division. Head Quarters Aldershot.	1st (Foot Guards) Brigade	Aldershot.
	2nd Brigade	"
	Divisional Cavalry	Hounslow.
	" Artillery	Aldershot.
2nd Division. Head Quarters Aldershot.	3rd Brigade	Aldershot.
	4th "	"
	Divisional Cavalry	Hounslow.
	" Artillery	Aldershot.
3rd Division. Head Quarters Bordon (near Aldershot).	5th Brigade	Bordon and Longmoor.
	6th "	Lichfield, 2. Fort George, 1. Glasgow, 1.
	Divisional Cavalry	Hounslow.
	" Artillery	Hilsea and Bordon.

b. Corps Troops—

Corps Cavalry Regt., 1 Composite	{	London and Windsor.
Regt., Household Cavalry		
Corps Artillery	{	Aldershot and Gosport.
Corps Infantry		Windsor.

c. Cavalry Brigade—Head Quarters:—Aldershot.

3 Regiments	-	-	-	Aldershot.
1 R.H.A. Battery	-	-	-	"
1 Mounted Infantry Bn. (attached to Cavalry Division)	-	-	-	"

SOUTHERN COMMAND.

11nd Army Corps, and Cavalry Brigade (Ireland).

a. Three Divisions—Six Brigades.

		Peace Stations.
4th Division. Head Quarters Salisbury Plain.	7th Brigade	Salisbury Plain, 3. Pembroke, 1.
	8th "	Sheffield, 1. Portland, 1. York, 1.
	Divisional Cavalry	Edinburgh, 1.
	" Artillery	Shorncliffe. Bulford (Salisbury).

		Peace Stations.	
5th Division. Head Quarters Dover.	9th Brigade	- - -	{ London, 2 (Guards). Channel Isles, 2. Dover, 2. Shorncliffe, 2.
	10th Brigade	- - -	{ Shorncliffe. Shorncliffe. Shorncliffe and Brighton.
	Divisional Cavalry	- - -	
	„ Artillery	- - -	
6th Division. Head Quarters Devonport.	11th Brigade	- - -	{ Portsmouth, 2. Gosport (now at Hounslow), 1. Parkhurst, 1. Devonport. Shorncliffe. Trowbridge and Exeter.
	12th Brigade	- - -	
	Divisional Cavalry	- - -	
	„ Artillery	- - -	
<i>b. Corps Troops—</i>			
	Corps Cavalry Regiment	-	Colchester.
	Corps Artillery	- - -	Bulford, Christ- church, Dorches- ter and Dover.
	Corps Infantry	- - -	Shorncliffe.
<i>c. Cavalry Brigade—Head Quarters :—The Curragh.</i>			
	2 Regiments	- - -	The Curragh.
	1 Regiment	- - -	Dublin.
	R.H.A. Battery	- - -	Woolwich.

IRISH COMMAND.

IIIrd Army Corps and Cavalry Brigade.

<i>a. Three Divisions—Six Brigades.</i>		Peace Stations.	
7th Division. Head Quarters Curragh.	13th Brigade	- - -	{ Dublin, 2; Militia, 2 Curragh & Dublin. Yeomanry. Kildare & 3 Batts. Militia F.A.
	14th „	- - -	
	Divisional Cavalry	- - -	
	„ Artillery	- - -	
8th Division. Head Quarters Cork.	15th Brigade	- - -	{ Cork, Templemore, and Buttevant. Fermoy, Limerick, and Tipperary. Yeomanry. Cahir and 3 Militia Batteries F.A.
	16th Brigade	- - -	
	Divisional Cavalry	- - -	
	„ Artillery	- - -	

¹Only when for service abroad, otherwise there is no Cavalry Brigade available for the IIInd Army Corps.

		Peace Stations.	
9th Division. Head Quarters Belfast.	17th Brigade	- - -	Belfast and either Holywood or In- niskillen and 2 Militia Bns.
	18th Brigade	- - -	Athlone and Mul- lingar and Militia Bns.
	Divisional Cavalry	- - -	Yeomanry.
	" Artillery	- - -	Dundalk and 3 Batteries Militia Field Artillery.
b. Corps Troops—			
	Corps Cavalry	- - -	Ballincollig.
	" Artillery	- - -	Newbridge, Kildare.
	" Infantry	- - -	Militia.

EASTERN COMMAND.

IVth Army Corps and Cavalry Brigade.

a. Three Divisions—Six Brigades.		Peace Stations.	
10th Division. Head Quarters Colchester.	19th Brigade	- - -	Colchester, 3 and Guards 1, London.
	20th Brigade	- - -	Woolwich 1, War- ley, Chatham 2.
	Divisional Cavalry	- - -	Yeomanry.
	" Artillery	- - -	Colchester and 3 Auxiliary Artil- lery, F. Batts.
11th Division. Head Quarters London.	21st Brigade	- - -	Militia.
	22nd "	- - -	
	Divisional Cavalry	- - -	Yeomanry.
	" Artillery	- - -	Woolwich and 3 Auxiliary Artil- lery F. Batts.

NOTE.—The Cavalry Brigade, on the despatch of the IInd Army Corps abroad, proceeds, as detailed with that Corps, and a Mounted Brigade for the IIIrd Army Corps is made up of the Corps Cavalry Regiment, the three Reserve Squadrons of the brigade abroad (formed into a Composite Regiment), a Regiment of Yeomanry, and the Battery of Royal Horse Artillery, stationed at Newbridge in peace. The place of the latter in the Cavalry Brigade for abroad is then taken by a battery from Woolwich. The Mounted Infantry Battalion quartered at Kilworth then constitutes the Corps Mounted Regiment.

Also under these circumstances two Regular battalions from each of the 14th, 15th, and 16th Brigades are replaced by Militia, and constitute with an extra brigade Royal Field Artillery, and two heavy batteries, stationed at Athlone and Cork respectively, a portion of the division for Lines of Communication.

12th Division. Head Quarters London.	{	23rd Brigade	-	-	-	Peace Stations.	
		24th	"	-	-	-	Volunteers.
		Divisional Cavalry	-	-	-	-	Yeomanry.
		" Artillery	-	-	-	-	Woolwich and 3 Auxiliary Artillery F. Batts.
<i>b. Corps Troops—</i>							
		Corps Cavalry Regiment	-			Composite Regt. of 3 Reserve squadrons from Divisional and Corps Line Cavalry of 1st and 2nd Army Corps.	
		Corps Artillery	-	-	-	Ipswich and Woolwich.	
		Corps Infantry Battalion	-			Volunteers.	
<i>c. Cavalry Brigade quartered in the Command.</i>							
		Household Cavalry Brigade	-			London & Windsor.	

On Mobilisation when the Corps Cavalry Regiment for the 1st Army Corps is formed, the Cavalry Brigade IVth Army Corps will consist of 6 Squadrons Household Cavalry and 3 Reserve Squadrons of Regiments of 1st Cavalry Brigade, with 1 Battery R.H.A. St. John's Wood.

NORTHERN COMMAND.

Vth Army Corps and Cavalry Brigade.

a. Three Divisions—Six Brigades.				Peace Stations.
13th Division. Head Quarters York.	{	25th Brigade	- - -	} Militia.
		26th	- - -	
		Divisional Cavalry	- - -	
		" Artillery	- - -	
14th Division. Head Quarters Chester.	{	27th Brigade	- - -	} Militia.
		28th	- - -	
		Divisional Cavalry	- - -	
		" Artillery	- - -	
15th Division. Head Quarters Manchester.	{	29th Brigade	- - -	} Volunteers.
		30th	- - -	
		Divisional Cavalry	- - -	
		" Artillery	- - -	
				Yeomanry.
				Sheffield and 3 Batts. Auxiliary Field Artillery.
b. Corps Troops—				
		Corps Cavalry Regiment	- - -	Yeomanry.
		" Artillery	- - -	Woolwich & New- castle.
		Corps Infantry Battalion	- - -	Volunteers.

c. Cavalry Brigade—

Yeomanry.

1 Battery of Horse Artillery, Hon. Artillery Co.

SCOTTISH COMMAND.

VIth Army Corps.

<i>a.</i> Three Divisions—Six Brigades.				Peace Stations.
16th Division. Head Quarters Edinburgh.	31st Brigade	-	-	Militia.
	32nd "	-	-	Volunteers.
	Divisional Cavalry	-	-	Yeomanry.
	" Artillery	-	-	Limerick and 3 Auxiliary Field Batts.
17th Division. Head Quarters Glasgow.	33rd Brigade	-	-	Volunteers.
	34th "	-	-	
	Divisional Cavalry	-	-	Yeomanry.
	" Artillery	-	-	Fermoy and 3 Aux- iliary F. Batts.
18th Division. Head Quarters Perth.	35th Brigade	-	-	Militia.
	36th "	-	-	
	Divisional Cavalry	-	-	Yeomanry.
	" Artillery	-	-	Waterford and 3 Auxiliary Field Batts.
<i>b.</i> Corps Troops—				
	Corps Cavalry Regiment	-	-	Yeomanry.
	" Artillery	-	-	Glasgow and Stobs (no R.H.A.).
	Corps Infantry	-	-	Volunteers.

No Cavalry Brigade or Royal Horse Artillery.

DIVISION OF ALL ARMS for Service on Lines of Communication (formed on Despatch of 2 Army Corps abroad).

				Peace Stations.
2 Cavalry Regiments	-	-	York, Edinburgh	} Not included in detail given for Army Corps.
1 Mounted Infantry Battalion	-	-	Salisbury Plain	
1 Battery R.H.A.	-	-	Woolwich	
1 Brigade R.F.A.	-	-	Athlone	
2 Heavy Batteries R.G.A.	-	-	Cork	
6 Battalions from 14th, 15th, and 16th Brigades (part of IIIrd Army Corps, except under circumstances detailed previously). This Division to be in war under command of the General Officer 8th Division.				

The whole of the above units herein detailed, Regular and Auxiliary, except 11 brigades of Field Artillery, to be formed from the 16-pounder and 20-pounder batteries of Volunteer Artillery as a nucleus, actually exist at present.

All the units in peace would be under the command of the G.O.C. of the Army Corps in which their stations are located.

It will be seen that the distribution of the units of the different arms as at present located in peace is practically untouched. It differs only from the present Army Corps Scheme in that (1) no cavalry and only 3 battalions of infantry are located on Salisbury Plain (2) only 18 Regular battalions are located in Ireland, and (3) the whole of the Regular forces are included in the Field Army. As regards artillery, an additional horse battery is stationed at Newbridge, the battery now at Manchester being located at the former station, and the field brigade located at Newbridge at present, being stationed in Scotland. All the Regular Divisional Artillery of the VIth Army Corps are located in peace in Ireland, saving the expense of increased barracks. The following changes in commands, etc., in peace are involved. The G.O.C. Northern Command administers the North-Eastern District direct. The brigadiers and their staffs for the 2nd Cavalry Brigade and Household Cavalry Brigade, the brigadiers of the 6th, 8th, 12th, and 25th Infantry Brigades and staffs are abolished. The G.O.C. Royal Artillery IVth Army Corps is transferred to the IIInd Army Corps. Colonels on the Staff for R.A. to command Corps artillery and superintend practice camps, are recommended to be established in the Ist and IIIrd Army Corps, as is now the case in the IIInd Army Corps; and in the IVth Army Corps to command the artillery of the field army of that corps, with headquarters at Stobs (when that camp is established), should be located a colonel from the mounted branch of the Regiment of Royal Artillery.

By this scheme (1) additional economy in administration, barracks, and commands would be ensured, without a sacrifice (it is thought) of efficiency, and the crowding of troops into limited areas for manœuvres avoided, and (2) the field force for abroad in war would be a formidable one without tapping any foreign stations for troops, (3) the Staff to be maintained in peace would constitute a sufficient nucleus for war.

A few words in conclusion on Internal Organisation. The organisation of the various branches of the Army generally has, in the last few years, been put on a satisfactory footing, but a little more has yet to be done for the Corps of Royal Garrison Artillery, of which one still hears complaints from its officers, as being injuriously affected by specialisation of individuals and units.

The following modest changes are recommended for consideration amongst others:—

1. The alteration of the title "Garrison" to "Fortress," and of "Company" once again to "Battery."
2. All the Garrison companies in turn to be organised and equipped either as "mountain" or "heavy and siege," thus terminating the present system of specialisation within the branch. The experimental formation from garrison companies of the "siege and heavy artillery" brigade at Aldershot this summer was satisfactory, in the opinion of all officers of experience, and this system should be extended to the mountain artillery, the units of which, after an interval of nearly 20 years, are all again located in India. The term of service of a garrison unit as either an interchangeable "heavy and siege" battery, or as a mountain battery, should be 8 years. On the exchange taking place, the headquarters and 65 per cent. of the units only would exchange establishments, and in the case of the *personnel*, joining the mountain unit, officers and men should be physically fit and

suitable for mountain work. The remaining 35 per cent., including specialists of each unit, would constitute an efficient nucleus, round which, as it were, the new members would form, and soon become efficient in their new duties. The garrison companies must, we should remember, always constitute a Reserve for the other units of the dismounted branch, and consequently should have a certain knowledge of their duties.

3. The number of the coast-defence companies should be reduced consistent with the maintenance of foreign drafts, to a minimum, many of their duties being undertaken by a body of old garrison artillerymen, enlisted on the same conditions as the Royal Garrison Regiment of Infantry, for service as "coast divisions" at home and in the colonies. The "coast divisions" should provide the district establishment from its ranks.
4. Vexatious restrictions should be removed from the conditions of issue of "armament pay," which should be styled "Garrison Artillery pay," and be issued to all officers of Garrison Artillery, on the same lines as Horse Artillery pay.

THE CHINESE ARMY.

By General H. N. FREY, late Commanding the French Peking Relief Force and the 1st Brigade of the French Expeditionary Force in China.

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This Article is one of a series from General Frey's new work, "*L'Armée Chinoise Ancienne, Nouvelle et dans l'Avenir*," which he has kindly given us permission to reproduce in the JOURNAL.

Continued from November JOURNAL, p. 1281.

V.

HAND-IN-HAND with the application of the reforms in recruiting and the professional training of the officers and men of all arms which will constitute the new army, China must proceed to the organisation of the different services, which are the indispensable auxiliaries to every Regular Army.

She already possesses at several places, or is in train for creating them, the arsenals which will provide her with artillery, rifles, and munitions of war in sufficient quantities to meet the needs of her Army and Navy. Moreover, attempts to organise medical, commissariat, and transport services, etc., have also been made at various places. Before even the last campaign in China, several corps of regulars possessed, although only in a rudimentary form, it is true, a staff of hospital attendants and bearers for the removal of the wounded on the field of battle and conveying them to the rear.¹

A regular commissariat and transport service with a financial control, both for war and peace, ought to be promptly organised by

¹In European armies the knowledge of the men that they will be carefully tended by competent and devoted persons in the case of illness or of wounds, whether in garrison life or in the field, exercises a considerable influence over their *moral*. There is nothing of this in Eastern armies. Some Chinese regular troops co-operated with the French in one of the operations against the Boxers, and distinguished themselves by their dash and bravery. A French officer having expressed his astonishment at their excellent behaviour, one of the regulars replied that death had no terrors for the Chinese soldier. That which he dreads, however, above everything, was knowing that if he fell wounded on the field of battle he would be abandoned without pity, and left to die of his wounds if he could not help himself. This prospect was not to be feared, the soldier said, by those who fought side by side with Europeans.

The Chinaman fears, also, that if left on the field he will receive no funeral honours, and that no one will make the ritual offerings over a body left without burial.

Another thing which troubles the Chinese soldier is the knowledge that if he survives his wounds, he may yet be incapable of earning his living, and the only thing then left for him is to join the multitude of beggars,

the Government of the Middle Kingdom. The sobriety of the Chinaman, the ease with which ordinarily the native troops can find the necessities of life on the spot, and the rapidity with which stores of all kinds can be concentrated at the probable theatres of the operations, thanks to the multitude of canals which traverse Chinese territory, have permitted up to the present the commanders of the Chinese corps to supply their wants as circumstances required, although probably more often badly than well. One knows what the sort of measures taken were: The troops are accompanied by a Tao-tai, a kind of Intendant, whose business it is to feed and pay the soldiers. Generally this is done at the expense of the inhabitants, who are squeezed without mercy. When these requisitions are not complied with with a good grace, or if the country is poor, the soldiers then provide for their own wants by marauding and pillaging. The necessity for a good transport system was proved by the operations in 1901 on the frontier of Shansi, when owing to the mountainous character of the region the Chinese troops found themselves deprived of their usual means of communication.

As regards the administration, and the control of the expenses of the Army, we know well that in China, the country of formalism, the most exact rules are laid down for the collection and employment of the public funds, so as to protect them against embezzlement and misuse of every kind. And also that those guilty of crimes and misdemeanours of this nature are threatened with the most severe punishment. But we know equally well, and one can say it without fear of contradiction, that there is no country where the embezzlement and waste of the public finances are carried on with so much impudence and cynicism. Mgr. Farrier wrote in 1897, with regard to the efforts made by Li-Hung-Chang to organise troops instructed in the European manner:—"Here again the venality and love of lucre have paralysed the first efforts. Out of two barrels of European powder, a Mandarin will make twelve, and then astonishment is expressed that the projectiles will hardly leave the muzzles of the guns; another Mandarin accepts defective arms; while at an inspection 2,000 well turned-out men are made to do duty for 6,000, being passed from fort to fort while the inspecting officer is refreshing himself. If one examines the stores of shell, only the outside ones are real, and so on through everything! These details fully explain why the Chinese fleet and Army were overthrown by the Japanese. If China could make her officials honest, had her officers properly instructed, and paid her troops; if, in a word, she wished really to take Europe as a model, the richness of her soil and the number

living from day to day on public charity. The Chinaman who leaves his village to enrol himself, can no longer count, except in very rare circumstances, on receiving any help from his commune, the charities of which are strictly reserved for members of the municipal community. The Chinese in the service of a European Power have no longer to face this danger.

There are indications which point to the line of conduct the Chinese Government must follow, in this question of the auxiliary services of the army; they show, in effect, better than any long discussions, the necessity, not only from a humanitarian point of view, but also from the view of the moral effect upon the soldiers, of establishing in their army a well-organised hospital service, as well as the policy of making generous provision for men who, through serving their country, may become incapable of providing for their own subsistence.

of her inhabitants would permit of her having in a few years a formidable fleet, an excellent infantry, and the most numerous cavalry in the world." One can pass the hot-iron over the sore by the application of the penalties directed against those who waste the public money; by the creation of a good body of military administrators and financial controllers, whose duty would be to put an end to these abuses—to suppress these "men of straw,"¹ an institution which flourished in our Army in a not very distant past; to see the men paid regularly, and all the other obligations of the State towards those who serve it strictly carried out; all of them matters of importance which, with good professional training, tend to the establishment of discipline, and to inspire both officers and men with those mutual sentiments of confidence and duty which create military solidarity, and thus contribute to the creation of powerful and brave armies! We shall not then see commanders who, in a time of profound peace, are in constant fear—as we know by experience on the Southern frontiers has been the case in certain Chinese corps, whose officers have been on intimate terms with ours—of seeing their men, armed with good magazine rifles, desert on any pretext in small bodies, generally because there has been delay in paying them, and take to piracy on their own account, either in their own country or across the border. Neither shall we see officers in command of cavalry camps obliged when they turn their men out for manœuvres, to exercise them only on ground where they can keep them continually under surveillance, for fear that they should go off with arms and baggage. In the course of the year 1899, an officer, invited by one of the generals of Yuan-Shi-Kai to assist at the manœuvres of a cavalry regiment encamped near Tientsin, complimented their commanding officer on the way the men managed their horses and drilled in close order; but all the movements were carried out in a confined space—a sort of race course. In order to ascertain how the Chinese troopers could act in extended order and perform scouting duties, the officer asked that a troop should be sent to a village some kilometres away and be ordered to make a reconnaissance:—"If I were to commit such an act of imprudence," replied the Chinese general, "I should never see the men again, as they would go off and sell their horses and equipment in the nearest market place." The good system under which men are recruited to-day in several parts of China, under the guarantee of the villages, will relieve the authorities from the fear of similar surprises.

VI.

A question of great moral importance, calling for reply, presents itself in regard to these Chinese armies of the future. Will these armies be capable of assimilating with the elements of European military science the principles of International Law which regulate the relations of the armies of the Western Powers?

The Chinese troops, and, more particularly in view of their police duties, the Militia, placed under the orders of the Administrators, probably took their share in all the cruelties and massacres that have accompanied the risings of which during the last century the Celestial Empire has been the theatre. However, in no account have

¹ "Passe-volans," men entered falsely on the muster-rolls, but really non-existent. A species of fraud not unknown in our own Navy and Army at one time.—TRANSLATOR.

we ever found any statement that the regular troops have practised towards their prisoners any of those refined tortures legalised by the Chinese laws, which have so often been inflicted by the mob on victims who have fallen into their hands. So we think that the following proclamation addressed to his army in September, 1894, by the Japanese Commander-in-Chief on the outbreak of the war with China, was principally intended to act on the *moral* of his troops by impressing upon their minds the consequences to which any faltering on their part would expose them: "The enemy has the reputation of being cruel and ferocious. If you have the misfortune to be taken prisoners you will certainly be subjected to atrocious sufferings, more terrible than death, and in the end you will be put to death in the most barbarous and inhuman manner. Take care, then, that, under no circumstances, are you made prisoners. Do not shrink from death!"

"The Japanese soldiers who are made prisoners are not only deprived of all succour, but they expose themselves to being massacred and to atrocious mutilations," was the statement made in 1895 during the war by a member of the Japanese Red Cross Society.

If the great Powers subjected themselves to a scrupulous examination of conscience, which among them could flatter itself that it had never failed in carrying out the principles of the rights of nations or of International Law? Or could declare that its soldiers, always and under all circumstances, had preserved an attitude absolutely free from all reproach towards conquered populations and armies, not only in the case of expeditions directed against savage tribes in different parts of the world, but even in wars carried out against civilised States? The sanguinary instincts of the brute, which sleep at the bottom of the heart of every human creature, awake sometimes in a terrible fashion in the heat of battle, especially during *mêlées*, while the sentiment of self-preservation pushes the soldier on to strike blindly at all that he believes capable of being still able to destroy him. True, the coolness of his chiefs and the appeal to sentiments of generosity and of clemency towards the vanquished promptly recall him to the right path. What we desire simply to bring forward is, that with regard to the great numbers of crimes which have lately stained China with blood,¹ are they to be traced directly to the Army? In this campaign different facts can, on the other hand, be cited to the honour of this army, because they show on the part of its heads a very high recognition, which one would not have credited them with, of their military and social duties. And, first, its loyalty towards the Allied contingents: the troops of Admiral Seymour's column, even after their first engagements with the Boxers, were able to keep side by side for several days with regiments of regulars, without their being the object of any hostile manifestations. The acts of hostility only commenced after the attack by our squadrons on the Taku forts—an attack which was considered by the Chinese army a declaration of war.

In the second place: The loyalty of this army towards the Chinese Court. The Chinese troops showed no hesitation at the beginning in attacking the Boxers—as disturbers of public order—and this in spite of the complicity of the common people and the Literati who made common cause with them. It is, moreover, well known

¹The total number of foreigners massacred during the Boxer movement was, at Peking, seven, and in the provinces two hundred and thirty-three—of whom ninety-two were men, eighty women, and sixty-one children—and in addition a number of natives estimated at thirty thousand.

that a number of Christians, notably native Christians, only owed their safety to the protection afforded them by the regular troops against the Boxers.

It may be as well to give here an account of one of these interventions by Chinese troops which had a somewhat singular *denouement*:—On the 5th August, 1900, the day of the battle of Peitzang, Father Dehus was found in the Chinese camp. The Father related that he was in charge of a missionary station about 20 kilometres to the north-east of Yang-Tsouan, at the time when the Boxer movement broke out. At the first sign of trouble he assembled in a Catholic village about a thousand native Christians, and, thanks to some old muskets, which he had been able to procure, he was able to hold out against all attacks made by the Boxers in the neighbourhood upon them. A Chinese general, who was charged with the maintenance of order in that region, presented himself with a number of regulars before the village. He summoned Father Dehus to send back his faithful flock to their homes, with the promise that no harm should befall them. He assured the Father also of his own safety, and engaged in writing to send him under a good escort to the French Consul at Tientsin. On the 4th August, Father Dehus was brought before General Ma, commanding the Chinese forces at Peitzang, who assured him that he considered himself bound by the promise which had been made to him to forward him safe and sound to Tientsin. The next day he was freed by the International Army.

The official reports on the last campaign of the Russians in Manchuria, 1900-1901, established the fact that during a suspension of hostilities, Russian soldiers made prisoners by Chinese detachments were returned to their officers without having been subjected to any ill-treatment.

To-day the newly formed corps of the Chinese Army carry on their ambulance *matériel* the Geneva Cross, testifying by the adoption of this sign, which places their wounded under the protection accorded by that International Convention, to the confidence which they place in this humanitarian work *par excellence*, and to the obligations they are themselves entering into to conform to International usages.

The Chinese Army is thus recognising frankly in this order of ideas, the benefits—we would rather say superiority—of Western civilisation, which the country will not be slow to follow in other points, when it is better enlightened on the views of Western nations, although among its laws are to be found odious punishments for certain crimes, but which, on the other hand, counts among the highest of virtues the love of one's neighbour, the worship of ancestors, respect for authority, and affection vowed to benefactors both during their lives and after their death.

In proportion as it transforms its organisation, perfects its methods of instruction and its manner of fighting on the model of European armies, will the new Chinese Army become impregnated more and more with the principles of duty, the spirit of self-denial, of dignity and brotherhood, which serve to regulate the conduct of those armies in their relations to the public authorities and other Powers. The prolonged association brought about by the period of international occupation, which still continues, will have given the high dignitaries of the Empire, as well as the civil and military Mandarins the oppor-

tunity of appreciating at their full value the troops of the great Western Powers from the point of view of their general and professional attainments, their high sentiments, and the superiority of their education, and will inspire the young men, who are destined to join the recently created Chinese military schools, with the ambition of imitating and equalling them. The knowledge of all that they have to acquire in order to be able fully to perform their duties will help to propagate among the people the elements of that science which the Literati have up to the present pushed into the background as the most baneful of all.

The moral level of the lower ranks of the army will be raised at the same time under the inspiration of such leaders, and thanks also to the excellent measures taken now for recruiting. And this will not be the least of the singularities which China will be able to show us—some day we shall see that army, which yesterday was so decried and despised, playing on the Continent of the Extreme East the rôle of moral and social instructor of the masses, which is the rightful duty of every army worthy of the name, and re-conquer again that high place, which is its due as the vigilant guardian of order, of the honour of the nation, and as the protector of its destinies.

VII.

In regard to the system of organisation of the military forces best suited to the Middle Kingdom, there is, in our opinion, no need—and China well understands it—of any profound modification of the principle of decentralisation, which has been the basis of the constitution of the old provincial armies; the sole object that reformers have for a long time had in view, being an essentially defensive objective, to the needs of which the actual distribution of the small army corps, which have been formed on important strategical points of the territory, perfectly lends itself.

In view of eventualities which are to be dreaded in the near future, but which, in a measure, can be provided against, it is sufficient for the Chinese Government to double or triple the strength of these small army corps in proportion to the sources from which they are recruited, by taking over from the various bodies of irregular troops their best men, and placing them under the charge of officers selected from the new military schools; and from among those soldiers of fortune who distinguished themselves most in the late war.¹

In the provinces of the interior, and generally speaking in those where the need for organising for war these small standing armies does not make itself felt, the Governors of the provinces should be invited to re-organise on their side their police forces as regards officering, armament, and, above all, the method of recruiting; getting rid of all unsatisfactory characters, so as always to have at their disposal the means for promptly repressing all attempts at piracy or rebellion. The Court of Peking must not lose sight of the fact that the agitation which is designedly kept up in certain of the provinces assists materially

¹ It was certainly with this in his mind that the late Li-Hung-Chang, in his communications with the Allied Generals, frequently asked their opinions as to the quality and defects of the Chinese troops they had been fighting, endeavouring in this way to inform himself as to the officers and troops who had particularly displayed conspicuous courage or tactical knowledge.

the pretensions of the Mandarins who are secretly opposed to all reform—whether administrative, financial, or military—and against the realisation of all progress, notably in any extension of the means by which the Court would be placed in rapid communication with the rest of the Empire. It must be taken into account that the hostility of most of these Mandarins proceeds less from their aversion to everything tending to modify the old established order of things, as from their fear that these reforms will affect adversely their personal interests. This agitation serves equally the views of those Powers, who only ask a propitious occasion for intervening in the affairs of China, under the pretence of claiming indemnities as compensation for losses which may have been caused to their subjects in the course of these risings.

If the need made itself felt, in the future, to group a certain number of these small army corps at given points, their concentration could be effected much more rapidly than in the past. The great development of telegraphic communication and of railways, with which Europeans with feverish haste are striving to endow the Middle Kingdom, will marvellously facilitate these concentrations of troops. At the same time, the establishment of all these new means of communication will serve to increase progressively the authority of the Central Power, which will soon find itself, thanks to these means, in close relations with the principal points of the Empire.

At present it does not seem to us to be indispensable that China should create a great national army on the same basis on which our Western armies are organised, at least, while she is passing through such a period of transition as she is doing to-day. It will nevertheless be of consequence from this moment for the Government to set up the machinery destined to assure, in favourable conditions, the general reorganisation of its military forces, the preparation of plans for the defence of the country, and, in case of necessity, the mobilisation and prompt concentration of some of these provincial army corps, their rational employment, and the effective working of all the services that that employment will involve. We would suggest the creation at Peking of a superior committee of defence, a kind of Grand General Staff of the Army and Navy whose duty would be to establish between the different small armies a unity and cohesion sufficient to utilise their organisation in the most efficient manner.

During this period of transition, which constitutes—we repeat—one of the most critical situations that the Chinese Empire has had to pass through, owing to the interests of every kind which gather round the question of the Extreme East, the scarcely disguised covetousness of certain Powers who are aiming at new territorial acquisitions, the distrust which the reorganisation of the Chinese military forces under the advice, if not the direction, of foreigners inspires in others, coupled with the grave embarrassment which might arise through the application of reforms on the lines on which the Government seem determined to act, we have no hesitation in asserting that if Chinese pride would only learn from the lessons that the history of the last fifty years has brought, the country would hasten to confide to a friendly Power the mission of organising that first essential, a Grand Council or General Staff, which ought, at the offset at least, to be constituted with the assistance of Europeans.'

Chinese arrogance is, according to the opinion of those who have written on this subject, quite invincible. All the misfortunes, which the country has experienced, have not been able to lower it, and it is to any other cause than inferiority in their knowledge that they attribute their reverses. In our opinion, there are some among the intellectual Chinese, among the Literati, who do really hold these views; but there are also a very large number who are opposed to the adoption of any reform, and are animated in this course solely by egoism and what they think their personal interests:—1. They are afraid that the execution of reforms would mean a serious control over their administrative acts, and their employment of State revenues, thus bringing about a considerable diminution in the source of the profits, which are attached to the position held by each Mandarin. 2. They are inspired by hatred of militarism, which they detest, less for high moral reasons, notably philanthropy, for instance, than because they see in the military Mandarins competitors, who for a long time have been out in the cold, for honours, public consideration, and emoluments of all kinds, which in the past have been looked upon by the Literati as their own special preserves, and which they still wish to retain entirely for themselves.

A well-educated Chinaman has certainly high scientific pretensions; his university degrees testify to his possessing the highest and most diverse qualities; he is ready to become an administrator, legislator, engineer, general, or assume any other rôle which may come in his way. The Emperor Kouang-Tsu, better inspired, gives proof of a modesty, and sets an example that in their own interests, if they understood them better, and, in any case, for the good of the Empire, these Literati would do well to follow:—"Europeans," he proclaimed, in a decree of the month of September, 1898, "can assist us to attain aims which we cannot reach by ourselves. There are to-day certain high functionaries, hide-bound in the narrow circle of their own ideas, who dare to tell Europeans that they do not possess the principles of true knowledge! They are entirely ignorant of how innumerable are the laws of European administration, and how far advanced they are in all branches of science, and how deep their religion."

In no branch of Western knowledge have the Chinese more need of the advice and teaching of European masters than in that of the organisation and leading of armies, that is, in the art of war.

There is certainly no lack in Western armies of tried generals and superior officers possessing all the requisite qualities, and who, new Gordons, would feel tempted by the greatness of the work to be carried out, to undertake the task. This intimate collaboration of the East and West, having for its objective the putting China in a position to be able to count soon upon possessing an army sufficiently strong to enable her to oppose a firm front to the covetousness of one single Power, would do more than all the wars for which the opening of the country to modern ideas has been the cause or the pretext, to bring about harmonious relations between the Eastern and Western world. It would allow the Chinese nation to evolve as peaceably as possible, without disturbance, the social revolution which is imposed on every nation as an implacable law, in all great changes of human institutions. Little by little she would assimilate the principles of our civilisation, and resume again in the advance of progress, which is the dream of philanthropists and philosophers, the place which belongs to her as one of the most ancient among nations.

(To be continued.)

NAVAL NOTES.

HOME.—The following are the principal appointments which have been made: Vice-Admiral—H. L. Pearson to be Commander-in-Chief at Sheerness. Captains—C. G. Dicken to "Tamar," as Commodore, 2nd Class, at Hong Kong; F. S. Inglefield to be Junior Sea Lord; C. H. Dare to "Berwick"; M. H. Smyth to "Research"; H. L. Tottenham to "Furious"; R. G. Fraser to "Bonaventure"; H. C. Reynolds to "Monmouth"; S. H. M. Login for Royal Naval Barracks, Portsmouth; C. H. Dundas to "Forte"; H. G. King-Hall, D.S.O., to "King Alfred." Commanders—E. E. Lacy to "Mutine"; G. P. W. Hope to "Pioneer."

The new first-class battle-ship "Albemarle," flying the flag of Rear-Admiral W. Des Vœux Hamilton, left Portsmouth on the 25th ult. for the Mediterranean. The second-class cruiser "Highflyer," late flag-ship in the East Indies, paid off on the 25th ult. at Devonport. The new first-class armoured cruiser "Monmouth" commissioned at Devonport on the 2nd inst. for service with the Cruiser Squadron. The second-class cruiser "Bonaventure" commissioned at Devonport on the 3rd inst. to relieve the second-class cruiser "Amphion" on the Pacific Station. The second-class cruiser "Furious" commissioned at Chatham on the 3rd inst. for service in the Mediterranean, where she will relieve the "Gladiator," a sister ship. The new first-class armoured cruiser "Berwick" commissioned at Portsmouth on the 9th inst. for service with the Cruiser Squadron, the crew of the "Sutlej" turning over to her, that ship having paid off on the 27th ult. at Chatham.

The Cruiser Squadron, under the command of Rear-Admiral Fawkes, C.V.O., is to proceed to the West Indies for combined exercises with the North American and West Indian Squadron, under the command of Vice-Admiral Sir A. L. Douglas, returning to England next April; when all the new ships join Admiral Fawkes' flag, the squadron will consist of the following first-class armoured cruisers, all of 23-knot speed:—"Good Hope," (flag), "Drake," "Kent," "Donegal," "Berwick," and "Monmouth."

The second-class cruiser "Flora," while on her way from Comax, where she had been coaling, to Esquimalt, went on shore off Village Point, Denman Island, on the 3rd inst. There was a dense fog at the time, and the vessel passed on the wrong side of one of the beacons and went on the rocks. Although hung up in a dangerous position, all her fore part being out of the water at low tide, and her stern submerged, she was successfully floated on the 10th inst., after the removal of her coal, stores, etc., and has been towed to Esquimalt for docking. She does not appear to have received much damage, and made very little water after she was floated.

Steam Trials.—The new third-class cruiser "Clio," which is fitted with water-tube boilers of the Niclausse type, has successfully completed her trials, which all proved successful. The results were as follows:—Thirty hours' trial three-fourteenths maximum I.H.P.—Pressure of

steam in boilers, 156 lbs.; ditto at engines, 147 lbs.; vacuum, 27.1 inches; revolutions, 119.7 per minute; I.H.P., 313; coal consumption, 2.31 lbs. per I.H.P. per hour; loss of water, 1.15 tons; speed, 8.7 knots. 'Thirty hours' trial at five-sevenths maximum power.—Pressure of steam in boilers, 213 lbs.; ditto at engines, 196 lbs.; vacuum, 26.7 inches; revolutions, 183 per minute; I.H.P., 1,036; coal consumption, 1.95 lbs. per I.H.P. per hour; loss of water, 1.58 tons; speed, 13 knots. Full-power trial (eight hours).—Pressure of steam in boilers, 221 lbs.; ditto at engines, 197 lbs.; vacuum, 25 inches; revolutions, 199 per minute; I.H.P., 1,433 (33 in excess of the specification); coal consumption, 2.03 lbs. per I.H.P. per hour; loss of water, .7 ton; speed, 13.33 knots.

The new torpedo-boat destroyer "Ettrick" has completed a successful full-speed trial of four hours' duration off Tynemouth, which was followed by circle-turning and steering, stopping, and starting trials. For the former trial the mean results of six runs on the measured mile were 25.464 knots, 347.4 revolutions per minute, and 7,173-I.H.P. During the remaining three hours' continuous steaming the speed was determined by the revolutions (348.75) worked out at 52.568 knots, and the H.P. 7,125. The conditions of the contract were 25.25 knots for the first hour, and 25.5 for the last three, the I.H.P. not to exceed 7,000 for the latter speed; but a margin of five per cent was allowed on this, and also on the revolutions, viz., 350. The trial was considered satisfactory, and the "Ettrick" will be got ready for her coal-consumption trial at 13 knots for twelve hours, which will determine her radius of action at her most economical speed.

The new destroyer "Erne" has also had a satisfactory official four hours' coal consumption trial at full speed off Tynemouth. Starting with six runs on the measured mile, the mean speed obtained was 25.374 knots with 347.5 revolutions per minute, and 7,150-I.H.P. developed by the engines, this being well above the contract speed of 25 knots for the first hour, and also that required for the last three hours, viz., 25.4 knots. So the engines were kept going at about this speed for the remainder of the trial, the figures at the end working out at 25.395 knots, 347.8 revolutions, and 7,160-I.H.P. The steam pressure throughout was about 245 lbs. per square inch, and air pressure in the stokeholds two inches, the fans making 400 revolutions. The piston-rod glands leaked slightly, but otherwise the machinery worked well. On the coal remaining in the bunkers being weighed out, the consumption for the four hours was found to have been 28½ tons, which, divided by the H.P., worked out at 2.25 lbs. per I.H.P. per hour. The figure allowed is 2.5 lbs.

The third-class cruisers "Medea" and "Medusa" arrived at Plymouth on the 9th ult., after a successful run from Gibraltar, which was carried out for the information of the Boiler Committee. The cruisers left Gibraltar on the morning of Friday, the 6th ult., and had a good run home, the race being a keen one from start to finish. Each cruiser had four boilers in operation. At the start the "Medusa" got half a-mile ahead, and, leading throughout, she won by three minutes. During Friday, the "Medea" began to come up, but within six hours three of her fans failed, and by Sunday morning the "Medusa" had a lead of nine miles. Then the "Medea," her fans having been repaired, began to creep up, and the distance between the two ships was gradually lessened. At six o'clock in the evening the "Medea" was only a mile astern. The scene in the stokeholds of both ships was then very exciting, even the officers assisting in stoking and passing coal. By nine o'clock the "Medea" had made up the leeway to three-quarters of a mile, and by this time the Eddystone, the finishing point of the race, was only 60 miles away. Although the crew

of the "Medea" worked their hardest, they could not overhaul the "Medusa," which rounded the Eddystone at five minutes after midnight, the "Medea" following five minutes later. When allowance is made for "Medusa's" start, she actually won by three minutes. The "Medusa" is fitted with water-tube boilers of the Dürr type, and the "Medea" with large tube boilers of the Yarrow water-tube type. Both ships are shortly to be paid off, when the "Medusa" will become tender to the "Impregnable," training-ship for boys at Devonport, and the "Medea" will become tender to the "Ganges," training-ship for boys at Harwich.

The "Libertad" and "Constitution."—The Admiralty have announced that both these ships, which have been built by the Vickers firm at Barrow, and the Elswick firm, Newcastle-on-Tyne, respectively, have been purchased for the Navy. The "Libertad," which is nearly ready for sea, has recently completed her steam-trials successfully, when she attained a speed of 20½ knots, at a full-speed trial over the measured mile. It is reported that the ships will be re-named the "Swiftsure" and "Triumph."

Launches.—Three of the new improved County class of armoured cruisers have recently been launched. On 24th September the "Hampshire" took the water from the Elswick Yard; on the 7th October the "Carnarvon" from the Yard of Messrs. Beadmore, Govan-on-Clyde; and on the following day the "Antrim," from the yard of Messrs. J. Brown & Co., Clydebank. The contracts for all three vessels were given out in April, 1902, and they were laid down on the 1st September, the 1st October, and 27th August of last year, respectively. The dimensions of all three of these vessels are the same:—Length between perpendiculars, 450 feet; beam moulded, 68 feet 6 inches; depth moulded to upper deck, 38 feet 6 inches; mean load draught, 24 feet 9 inches; displacement at load draught, 10,700 tons; I.H.P., 21,000; speed, 22½ knots. The coal bunkers are placed above and below the protective deck, abreast the engine and boiler rooms, thus forming additional protection in time of action. They have a total capacity of about 1,800 tons. The lower protective deck proper is of the turtle-back type, and extends fore-and-aft the ship, forming a shelf at side below the water-line, for the support of the armour belt. All machinery, magazines, auxiliary machinery, etc., are placed below this deck, which is intended to protect the vital parts of the ship. The main armour-belt, of specially hardened steel, extends from the lower to the main deck at the sides, and for a length of about 250 feet amidships protecting the machinery spaces and magazines. The thickness of the belt for this distance is 6 inches. Forward of this the armour is reduced to 4½ inches for about 50 feet, and from this point to the stem the protection consists of nickel-steel plates 2 inches thick, which come well down below the water-line at the extreme forward end, and assist in strengthening the ram. At the after end of the 6-inch belt armour a transverse armour bulkhead, 4½ inches thick, is run across the ship between the lower and main decks, connecting the after ends of the belt armour. Over the citadel thus formed by the side and bulkhead armour there is the main deck, of two thicknesses of plating, together about 1½ inches. The thickness of the lower protective deck from the stem to the after end of the citadel is about ¾ inch, but abaft the armour bulkhead it is increased to about 2 inches. The barbettes for the 7.5-inch guns and casemates for the 6-inch guns are of specially hardened steel, 6 inches in thickness. Special high tensile steel has been introduced into the construction of the vessels for shell and deck plating, in accordance with the latest Admiralty practice. The armament will consist of two 7.5-inch breech-loading Q.F. guns of latest pattern, mounted in barbettes, one on forecastle and one on poop-deck aft; ten 6-inch breech-

loading Q.F. guns in casemates on the broadsides (four of these can be trained right astern and four right ahead); ten 12-pounder Q.F. guns; three 3-pounder Q.F. guns; eight 303 Maxim Q.F. guns; and two submerged broadside torpedo-tubes. The propelling machinery will consist of two sets of triple-expansion engines in separate water-tight compartments, each set having four cylinders, the diameters being about 41½ inches, 65½ inches, 73½ inches, and 73½ inches, and the stroke 3 feet 6 inches. Three sets of water-tube boilers in three separate water-tight compartments will be supplied, and also a fourth set of six single-ended cylindrical boilers in the after boiler-room. The working pressure will be about 210 lbs. The weight of the hull with armour is about 6,665 tons, or nearly 800 tons in excess of the earlier vessels of the class. The approximate cost is about £850,000.

The new third-class cruiser "Amethyst" was launched on the 5th ult. from the yard of Messrs. Armstrong, Whitworth, and Co., at Elswick, Newcastle-on-Tyne. Her dimensions are as follows:—Length between perpendiculars, 360 feet; beam, 40 feet; displacement, 3,000 tons, with a mean draught of 14 feet 6 inches. Her armament will consist of twelve 4-inch Q.F. guns, eight 3-pounder Q.F. guns, two Maxims, and two discharges for 18-inch torpedoes. She will have a 2-inch steel protected deck. She is the first ship, with the exception of the two destroyers "Velox" and "Eden," to be fitted with turbines of the Parsons compound type. She will have three screws, driven by turbines, which, under forced draught, are to develop 9,500-I.H.P., to give a speed of 21·8 knots. Special turbines are to be fitted for going astern; and to secure economy at cruising speeds, two cruising turbines will also be fitted, in addition to the high-speed one. The boilers are to be of the modified Yarrow type.—*Times, Naval and Military Record, and Engineering.*

The Naval Manœuvres: Umpires' Report.—"We have the honour to submit for the consideration of the Lords Commissioners of the Admiralty the following report on the operations carried out during the Naval Manœuvres of 1903:—

The object of the Manœuvres is not, as in former years, given directly in the papers issued from the Admiralty, but is contained in the General Idea, and was understood by all who took part in the operations to consist—Firstly, of the endeavour of "B" to combine his force ("B 1") from northern waters with his available forces ("B 2") at Madeira; and then, secondly, to engage "X," known to be concentrating at Lagos, with the object of wresting from him the command of the sea which he held in those waters.

The problem of the junction of "B 1" and "B 2" had two aspects, the one, in which the highest speeds of the "B 1" and "B 2" Squadrons would just enable them to meet at a point near the Azores, which "X" Fleet at its highest speed, might or might not be able to reach first; the other, in which the junction would be effected, by strategy, at any other point within the limits made by the first case.

"B" Admiral, trusting to the speed of his ships, chose the westernmost point which he and "B 2" could attain in a given time, and which calculation showed that "X" could not reach first, unless he steamed there direct at 16 knots.

As "X" Fleet never was, at any time of the Manœuvres, able to go 16 knots, the junction took place, without hindrance, near to the appointed

rendezvous, and only about two hours later than the estimated time. But even if "X" Fleet had been able to steam 16 knots it would not have prevented the junction because of the deviation which the "X" Admiral made from the shortest line in order to pass through the Central Rendezvous.

His orders show that "X" Admiral had provided for the chance of a junction at any other point, and that he had planned to shape his course on the information he received from his cruisers. The one sure thing that he had in his favour was that his fast cruisers could be at Madeira before "B 2" left it, and they were!

If information reached him from them promptly, the plans he had laid might have enabled him at 16 knots to have run down "B 2" before the junction took place, provided "B 2" had failed to maintain 14 knots. The information in spite of the losses in cruisers caused by breakdowns, came promptly and accurately from the cruiser Admiral, for the two days that "B 2" was proceeding steadily to the N.W., but "X" Fleet lacked the speed, the junction was not prevented, and the first part of the Manœuvres ended in favour of "B."

Next, in pursuance of his ultimate object, "B" sought for "X" and found him; each Fleet was short of one battle-ship, and the "Mars" limited the speed of "B" Fleet to 11 knots. "X," intending first to rejoin his battle-ships, tried to avoid, and "B" to force on, an action, and he so far succeeded that he tempted "X" to engage his leading Division while keeping on at his highest speed.

"B" strove hard to keep touch with "X," by ordering what was practically a general chase of "X's" rear division, and when he found that his Fleet was being drawn out and separated, and that he was unable to prevent "X's" passing out of his reach, he discontinued the action.

The result of the general engagement, which includes the separate action of the detached ships, according to the probabilities of war, was, that on "B's" side, three battle-ships, one armoured and one protected cruiser were disabled; five battle-ships were damaged, and one protected cruiser was lost. Whilst on "X's" side one battle-ship and one armoured cruiser were lost, two battle-ships disabled, and one battle-ship damaged.¹

By a "disabled ship" we understand a ship that cannot be made efficient except by extensive repair in a dockyard, whether such a ship is temporarily captured by the enemy, sunk—as would probably happen in the case of a vessel entirely disabled—or recovered by her own side, is immaterial, as regards the fighting force that remains; if anything, the charge of such vessels would weaken, because they would hamper any fleet that was far from its naval base.

We are also of opinion that though the "Illustrious" was entirely disabled when she left her Fleet, there is no practical way in which "B" Fleet can be compensated for her having taken a small part in the separate action. Taking all the circumstances into account it is improbable that the "Cæsar" would ever have left "the line" if the "Illustrious" had not been able to follow her.

Judged, therefore, by the probabilities of war, and considering that the undamaged portion of "X" Fleet was much superior to the undamaged portion of "B"; that "B" in effecting the junction had expended more coal than "X," that "B 1" was further from its base than "X" Fleet was from Gibraltar, and that on the morning of the 11th "X" had joined his missing battle-ship and armoured cruiser, though he had lost the "Venerable" by a machinery breakdown, we are of opinion that at the

¹ The "Good Hope" and "Bacchante" are considered only temporarily out of action and to have returned to their defended ports.

end of the Manœuvres the command of the sea in those waters still remained with "X."

LEWIS BEAUMONT,
Vice-Admiral.

C. J. BARLOW,
Rear-Admiral.

W. DES V. HAMILTON,
Rear-Admiral."

In view of this decision of the Umpires, it may be of interest to repeat here the opinion of M. Pierreval, the well-informed French naval writer, as to the results of the battle of the Azores, which we quoted in full in last month's JOURNAL :—

"At 3 p.m., the respective situations of the two fleets were as follows : Both fleets seemed to have been steering at that time nearly parallel courses towards the south, in line ahead, the B fleet being to the eastward; the 'Bulwark' leading the X fleet, being about 5,000 yards from the 'Majestic,' which was leading the B fleet, when she opened fire. Admiral Wilson had given the order to proceed at full speed, but the Home Squadron was unable to come up and had to open fire at too long a range to make it effective. In the meantime, the four ships at the head of the line, led by Lord C. Beresford, threatened to cut off the rear ships of X fleet; Admiral Domvile, perceiving this, ordered Rear-Admiral Custance to close with the enemy's van at full speed, while he himself at the same time concentrated the whole fire of his fleet upon it; this movement seems to have been entirely successful, and, as far as can be judged from the reports of eye-witnesses, Beresford's division would have been annihilated. At the same time, the 'Cæsar,' 'Illustrious,' and 'Renown,' which were still dropping astern, and in danger of coming under the fire of the whole of B fleet, received the order to turn to starboard in succession, and stand towards the west, and had this order been understood and properly carried out, the three ships would have saved themselves, as their speed was still superior to the division of the Home fleet sent in pursuit. But the signal was read as an order to sacrifice themselves; there was hesitation in carrying it out, and in the end the ships were placed *hors de combat*.

"Admiral Wilson had thus succeeded in forcing battle on an enemy inferior in number, but in the main the brunt of the fighting seems to have fallen entirely on his van, which would probably have been destroyed. Owing to the want of homogeneity in his fleet, he seems to have attained an inverse result to that which he tried to achieve: in place of fighting with superior forces, his van was crushed without the rest of his fleet in rear being able to intervene successfully. By way of retaliation for losing four of his best ships, he destroyed the enemy's three worst.

"Admiral Domvile, in the course of the battle, showed himself a tactician of the highest order. In spite of the way in which some of his signals were carried out, it is impossible to contest the soundness of his plan, the opportuneness of the measures he ordered, the rapidity of conception and the *coup d'œil* which determined them. He lost his three rear ships, but he regained the 'Exmouth,' his cruisers, and his free communication with his base. And if one looks from the point of view of the theme which was set, as to with which side the definitive command of the sea remained, we think that it was with him that victory lay. He lost three ships, but he regained one which he had lost, and, moreover, had destroyed his enemy's best division: he remained in communication with his base, and was in a position to fill up with coal and stores. The result

that he obtained was the more remarkable, as the conditions of the battle were extremely advantageous to his adversary."

FRANCE.—The following are the principal appointments which have been made: Vice-Admiral—R. J. Marquis to be Commander-in-Chief of the 4th *Arrondissement Maritime* (Rochefort). Capitaines de Vaisseau—F. F. Rabouin to "Jauréguiberry"; C. X. Ridoux to "Léon-Gambetta."—*Le Journal Officiel de la République Française*.

In view of the long list of repairs which are now being carried out in the "Jeanne d'Arc," which is in the dockyard hands at Brest, Rear-Admiral Bugard, who is in command of the Cruiser-Division of the Northern Squadron, was ordered to transfer his flag to the new first-class armoured cruiser "Marseillaise," and proceed in her with the first-class cruiser "Guichen" to Cherbourg, to salute the King and Queen of Italy on their embarkation for England on the 16th ult. The "Marseillaise" having completed all her trials, commissioned at Brest on the 11th ult. for service with the Northern Squadron, with the reduced complement which is all that is allowed for the ships of the squadron between the 1st October and 1st April.

The Hospital Sisters.—A decree published in the *Journal Officiel* abolishes the services of the *sœurs hospitalières* in the naval hospitals, the Minister of Marine, it is stated in explanation, having discovered certain irregularities in their management of the stores in their charge.

In compliance with the above decree, 23 hospital sisters left the naval hospital at Cherbourg on 20th November, a crowd of about 2,000 sympathisers being present to witness their departure. Before leaving, the Controller-General Dutouquet desired to inspect their personal baggage, upon which the Supérieure, pointing to her Cross of the Legion of Honour, said, "This and my word should satisfy you. Allow us to take our departure, and spare us these useless vexations."

On the same day the 40 sisters attached to the naval hospital at Brest also took their departure. Several thousand people were present to see them off, and respectfully lined the streets from the hospital to the Church of St. Louis, where, after attending a valedictory service, the sisters proceeded to the railway station and left by train.

The Reserves.—The 1895-1897 classes of reservists of the fleet are to be called out for four weeks' training in 1904. The date fixed is the first Monday in July.

Dockyard Notes and New Ships.—*Cherbourg.*—The new first-class armoured cruiser "Desaix" is continuing her trials satisfactorily; at a six-hours' coal-consumption trial, with the engines developing 13,671-I.H.P., and making 136 revolutions, the speed obtained was 19·6 knots, the consumption per I.H.P. per hour being 738 gr. (1·47 lbs.), and by square metre of grate surface, 102 kg. (224·8 lbs.); she concluded her official trials on the 17th ult. by a four hours' run at full speed, at which the engines developed 17,715-I.H.P., being 615-I.H.P. over the contract, giving a speed of 20·7 knots, which is slightly below the estimated speed of 21 knots; the consumption per H.P. per hour was 838 gr. (1·67 lbs.) and 148 kg (326·19 lbs.) per square metre of grate surface; the Belleville boilers with economisers worked without a hitch, and it is believed that, with different screws, the contract speed will be easily reached. It is complained that the stoke-

holds of all the cruisers of this type are so cramped that the men cannot stand upright in them.

The new first-class armoured cruiser "Amiral Aube" has also been continuing her trials. At the official coal-consumption trial at 14,000-H.P., the engines actually developed 14,319-I.H.P.; the consumption per H.P. per hour was only 580 gr. (1·16 lbs.), the contract allowing for a consumption of from 750 gr. (1·5 lbs.) to 800 gr. (1·6 lbs.), the consumption per square metre of grate surface being 76 kg. (167·5 lbs.) per hour. The speed attained was not given. At a further trial of twenty-four hours the engines developed 10,850-I.H.P., with the very low consumption of 588 gr. (1·17 lbs.) per H.P. per hour; her boilers are also of the Belleville type, with economisers.

While the new first-class armoured cruiser "Kléber" was running a trial at 14,000-I.H.P., and steaming at a rate of 19 knots, she was attacked by the submarine "Algérien," which was only discovered across her bows when it was too late to avoid her. Although the submarine at once dived, a collision occurred, and she was struck by the cruiser's screws; her rail was smashed and some of the plates on her upper side bent in, but she was able to return to the repairing dock without assistance, which speaks well for the strength of her hull. The "Kléber" had her screw shafts damaged, and has had to be docked for repairs.

Brest.—The new first-class armoured cruiser "Marseillaise," having completed her trials and been taken over officially, was commissioned on the 11th ult. for service with the Northern Squadron. It is reported that the new first-class armoured cruiser "Jeanne d'Arc," which only commissioned some three months ago as the flag-ship of the Cruiser-Division of the Northern Squadron, is to be temporarily paid off, as she has developed so many defects that it will take five months to make them good.

The new first-class battle-ship "Suffren" is at last approaching the completion of her trials. At a four hours' full-speed trial the engines developed 16,715-I.H.P., or 500-H.P. over the contract, giving a speed of 18 knots, with a consumption of 149 kg. (328·39 lbs.) per square metre of grate surface per hour; her water-tube boilers are of the Niclausse type. She has made some further trials with oil and coal mixed, at speeds varying from 10 to 17 knots, with satisfactory results; using coal alone, 4,000-H.P. was developed, while with the same amount of coal and petroleum 5,900-I.H.P. was developed.

The first-class armoured cruiser "Léon Gambetta" was commissioned on the 1st inst. for her trials, which are to commence immediately; according to programme she ought to be ready for commissioning May 4th next year, but this is doubtful. Her draught of 26 feet 9 inches is considered excessive, but it is nevertheless hoped she will exceed the contract speed of 22 knots, and more nearly approach the 24 knots of the "Drake."

Lorient.—Both the new first-class armoured cruisers, "Condé" and "Gloire" are now in the roadstead for their trials. The "Condé" made her first full-speed run on November 12th, when her engines made 20,800-I.H.P., or 300-H.P. in excess of the contract, her coal consumption being 378 lbs. per square metre of grate surface. One of the turrets of the "Condé" is to be removed and sent to the naval proving ground at Gávres, where it is to be fired at by one of the 6·4-inch Q.F. guns; the armour of the turret is 4·7 inches thick, and it will take at least 20 days to dismount it; it is reported that some officers propose to be inside the turret during the experiment.

Work is being pushed on actively with the new first-class armoured cruiser "Victor Hugo." Part of her machinery has arrived from the

Indret Factory, and when she is launched, in March next, she will have her boilers and part of her main engines in place.

The new first-class armoured cruiser "Jules Michelet," which will shortly be commenced at this yard is to have the Du Temple-Guyot small-tube water-tube boilers, which have not given at all satisfactory results in the "Jeanne d'Arc" and "Jurien de la Gravière." The Minister of Marine has invited the Indret firm to propose some modifications, which will reduce the excessive expenditure of coal, and it is proposed to increase the grate surface, which, it is hoped, will reduce the consumption from 218 kg. (441.23 lbs.) to 187 kg. (412.14 lbs.) per square metre of surface. M. Guyot now proposes a further modification by increasing the grate surface from 118 to 147 square metres, which would reduce the coal consumption to 33.3 lbs. per square metre of grate surface per hour, while the number of tubes is to be reduced by a twentieth, or a total of 920 tubes.—*Le Temps*, *Le Yacht* and *Le Petit Var*.

The Naval Estimates for 1904.—The Naval Estimates presented to the Chambers by the Minister of Marine for 1904 amount to 312,931,832 francs (£12,517,273 6s.), as against 313,471,524 (£12,538,861) approved for the current year, thus showing a decrease of 539,692 francs (£21,587 14s.).

In the statement attached to the Estimates, the Minister of Marine calls attention to the necessity imposed upon him of keeping the Estimates as low as possible, in view of the present financial straits of the country, and the impossibility of exceeding the amount voted last year. He points out how the Naval Budgets of other countries, notably of England, Germany, Russia, and the United States, are steadily on the increase, and the disproportion between the French Navy and those of some foreign Powers is being accentuated more and more, and this in spite of the fact that the votes for new construction and for works connected with the different *points d'appui* for the fleet amount to 151 million francs (£6,040,000) and 148 million francs (£5,920,000) respectively, an increase of 20 and 30 million francs (£800,000 and £1,200,000) over previous years.

The expenses of the fleet in commission absorbs a very large part of the amount voted for the Estimates, but no large reduction, in his opinion, can be safely effected here, as it is in the ships on active service that the officers, non-commissioned officers and men are really trained. But the money so expended reduces the amount available for the construction of new battle units, the improvement of the dockyards, etc., in a word, the material additions to the naval strength of the country.

The ships in commission he divides into two categories: those which constitute a real fighting force, and those which from the point of view of eventual war, are in a measure a dead weight on the Navy. In this second category may be placed the small divisions and local stations, destined in time of peace to show the flag of France in distant seas for the protection of her interests in the two hemispheres, and to do police and transport duty in her oversea possessions. If war breaks out, these feeble fighting units dispersed over the globe would have everything to fear from meeting a more powerful enemy. It would only be by a fortunate combination of circumstances that the better armed among these vessels might have an opportunity of attacking a weaker force, or of effecting a junction with one of the other squadrons. With regard to the weaker ones, the only thing they could do would be to seek shelter while hostilities lasted. There are, then, grounds for reducing as much as French interests permit, the expenses connected with the maintenance in commission of

these vessels, since in the day of battle they will probably be lost as fighting units, and for concentrating instead all the country's resources on the rest of the naval forces.

Of the foreign stations, that of the Far East is the most important, and although it is not possible to maintain in China squadrons on the same scale as England, Japan, Russia, or even the United States, it is necessary that the French squadron should consist of a sufficient number of good fighting units of high speed, which can be used to attack, if necessary, any convoys, which have for their object the disembarkation of troops to attack French Colonies, and to threaten the commerce, communications, or possessions of enemies the country might be at war with. Two armoured cruisers are already on the station; it is proposed to add a third, so as to have a complete division; and to maintain a second division of fast protected cruisers, which is already composed of the fast commerce-destroyer "Châteaurenault" and two of the best second-class cruisers. Next comes the Atlantic Squadron, which necessarily is very weak; but in view of the important interests on the other side of the Atlantic, which have even in peace to be safeguarded, it is not advisable that it should be altogether composed of ships so weak, that if war broke out, they would have to seek shelter instead of fighting. It was therefore proposed to substitute for two of the older vessels a first-class armoured cruiser and one of the new commerce-destroyers, and this change has now been carried into effect.

In regard to the squadrons in home waters, for some years past it has become the custom to station the newest and most powerful battle-ships in the Mediterranean, and that squadron now consists of two divisions of three first-class battle-ships each, a division of armoured cruisers, a division of protected cruisers, and six destroyers. The Northern Squadron, on the other hand, has often been depleted of first-class battle-ships to a dangerous point, and it is only since 1899 that it has been deemed necessary to have in the Channel and Atlantic some powerful fighting units, and in the three years which followed the Northern Squadron was composed, like the Mediterranean, of six first-class battle-ships; since then, however, a different policy has prevailed, and the squadron has been denuded again of all but one or two battle-ships, and these not of the newest type. It has now been found again possible to form a division of first-class battle-ships for the Northern Squadron, the other division consisting of coast-defence battle-ships, which for the present cannot, however, be replaced by better ships, although as fighting vessels they have long been universally condemned.

It is only proposed in 1904 to lay down one new large ship, and she is to be a first-class armoured cruiser of an improved "Ernest-Renan" type; six destroyers are to be laid down, five in the dockyards and one in a private yard; two new first-class torpedo-boats are also to be commenced in one of the dockyards, while sixteen submarines or submersibles are also to be commenced, but their type has not yet been settled, and they will probably have a greater displacement than any yet built.

A considerable sum is to be spent on the *points d'appui* for the fleet abroad. A sum of 7,500,000 francs (£300,000) is appropriated for Bizerta, but this is less than last year, when nine million francs (£360,000) was expended. The Minister considers that no necessity exists in a time of peace for turning Bizerta into a sixth Maritime Prefecture with all the costly machinery which would be thereby entailed; it is not necessary to create a second African Toulon, but care must be taken to insure that in time of war the French ships should be able to replenish their stores and to repair such damages as are not too serious to prevent

their returning to the scene of action before the close of hostilities. But if a saving has been effected at Bizerta, the amount demanded this year for Algiers and Corsica is triple what was asked for two years ago; the sums being 600,000 francs (£24,000) for the first-named place, and 475,000 francs (£19,000) for the latter. The greater part of this money is required for the *Défenses Mobiles*; it being indispensable, in M. Pelletan's opinion, to establish as soon as possible, on all the coasts of France oversea, posts of torpedo-boats and submarines, to defend them against attack, and to harass the trade routes of the enemy. The first of these objects is of the most importance, and it would appear as if torpedo-vessels were to form the most efficacious protection of French *points d'appui* and French Colonial possessions; and it is to proceed with this work that so large a sum is being devoted to the oversea harbours. A beginning was made this year, when two submarines were sent to Bizerta and two torpedo-boats to Diego-Suarez.

A sum of 2,500,000 francs (£100,000) is required for Dakar. The works, which were ordered to be undertaken there some years ago, have been delayed, among other causes, by a bad outbreak of yellow fever, so there is a considerable amount of backway to be made up. As a *point d'appui*, Dakar is of the first importance, not only for the defence of one of the largest and richest of the French Colonies, but also for the operations which may be carried out from it in the adjoining ocean in the event of war. Another *point d'appui* which calls for expenditure is Martinique; here, again, the terrible events of which it has lately been the theatre have delayed the pushing on with the projected works. A further sum of 2,000,000 francs (£80,000) is to be expended on two of the ports in the East: Saigon in Indo-China, and Diego-Suarez in Madagascar, both of them important positions, which it is necessary to defend and arm.

As far as Indo-China is concerned, it is not sufficient merely to continue the works in course of construction at Saigon; it is necessary to organise on a sound basis the *Défenses Mobiles*, which must be stationed at the mouth of the river, the point where the flotillas will have to wait and watch for the enemy, and it is hoped that during 1904 the necessary works will have been carried out at Cape St. James. *Défenses Mobiles* have further to be established in Tonkin and Annam, and this will absorb nearly the whole of the 650,000 francs (£24,000) demanded for Indo-China.

It is necessary to push on the works for the Arsenal at Diego-Suarez, which have as yet been scarcely commenced. In 1903 a sum of 700,000 francs (£28,000) was voted, and it is proposed this year to double it. In view of the urgency of the work to be carried out at all these places, the amount asked for is quite insufficient, but at least it is hoped to seriously put things in train.—*Budget des Dépenses du Ministère de la Marine.*

UNITED STATES.—*Official Trial of the New First-class Battle-ship "Missouri."*—Over the Cape Ann course of thirty-three nautical miles, and return, under the most favourable weather conditions, the United States first-class battle-ship "Missouri," a vessel of 12,230 tons displacement, made an average speed, it is reported, on her official trial on 21st October, of 18.22 knots, and at one time the speed reached 18.75 knots. The contract speed was 18 knots. The entire course was covered in 3 hours 39 minutes 24 seconds, which, it is claimed, is the best record yet attained by vessels of her class. She is the only battle-ship in the Navy to be tried with Thornycroft boilers. The "Missouri" left her anchorage in President's Road at 8 o'clock a.m., 21st October. As she neared Thatcher's Island and the first station-ship, the cruiser "Chicago," was

sighted, the "Missouri" gradually increased her speed. After some manœuvring she passed the station-ship at 11:13:50. As she gathered her speed, the spray flew over her decks, thoroughly drenching the crew working forward. The "Missouri" passed the second station-ship at 11:36:10. The third station boat was passed at 12:21:45. The fifth station was passed at 12:44:05, and the sixth and last stake-boat at 1:06:05. The turn of the "Missouri" took in six miles of water stretch, and then she started on her home run. At 1:23:50 o'clock she passed the sixth buoy. The fifth boat was passed at 1:45:32, the fourth at 2:06:50, the third at 2:27:55, the second at 2:49:05, and the first and final boat at 3:10:52 o'clock, when the announcement was made that the "Missouri" had surpassed all records for battle-ships of her class. The length of the "Missouri" is 388 feet, extreme beam 72 feet 2.5 inches, and mean draught 23 feet 6 inches. Her gross tonnage is 7,324.27, and she is equipped with twin screws.

Search-lights for Coast-defence.—Profiting by the reports on the manœuvres made last year, in which considerable criticism was made of the search-lights at the various fortifications, the Corps of Engineers has installed at the Portland fortifications, search-lights upon, what is considered, an improved method, in accordance with recommendations made in this regard by the Board of Engineers on the question of search-lights for seacoast fortifications, which has been approved by the Chief of Engineers, and which will govern the emplacement of such lights in the future. This report embraces recommendations as to the size, location, and best method of operating search-lights in connection with seacoast defences.

The Board of Engineers says that it has taken into careful consideration the reports of the officers who witnessed the manœuvres of last summer. These manœuvres showed that too many lights are as harmful, if not more so, than too few, and that the requirements for location of the lights with reference to the batteries, the observers, and the general shore are such as to necessitate a separate study of each harbour, so that the benefit to be gained from the use of lights may not be partly or wholly destroyed through faulty location or injudicious operation and control. The report says:—

"The following principles are submitted as embodying the best experience gained from the manœuvres and from all other available sources:—

a. The lights should be divided into two general classes, namely: Searching and illuminating. The searching lights should be sufficiently powerful to waterline the vessels at the extreme range of the heaviest guns. The searching lights should be located well in advance of the line of defence, and so disposed as to cover all avenues of approach and give the earliest possible warning. The illuminating lights should be located on the flanks of the batteries as far in advance as practicable.

"b. All lights should be located as near the shore line as practicable. c. During the daytime all lights should be effectually concealed from the enemy. d. During the watching period when the searching lights are in service, the illuminating lights should be occulted. e. When illuminating lights are in use, searching lights should be occulted or operated so as not to interfere with them. f. While the functions of searching and illuminating lights are considered separate and distinct, these lights should, in case of necessity, be interchangeable."

The report of the Board calls attention to the fact that the experience of the joint manœuvres of last summer proved that the effect of what

has been termed the "blinding light" upon war-ships has been generally overrated. The cases when such a light can be effectively used are very rare, and their use is further limited by the choice of position which, while not interfering with, should at the same time promote, the service of the batteries. In general, the Board says, the number of lights that can be installed is no more than sufficient for the more important searching and illuminating service, and there is no room for a system of blinding lights proper, but some of the lights may be favourably placed for this purpose and can be so used if opportunity is presented. Continuing, the Board says in its report :—

"The size of lights employed in the manœuvres included 24-inch, 30-inch, 36-inch and 60-inch. The results lead to the conclusion that the 36-inch light is the smallest which can be usefully employed, and that the 60-inch is fairly efficacious for the largest size required. It may be found that 72-inch lights will be advantageous in certain places, but the 60-inch can, for the present, be regarded as the practical limit, and to exceed this will not materially increase the effective range, while disproportionately increasing the cost. The sizes recommended are two only, the 36-inch and 60-inch. The average effective range of these lights with parabolic mirror and concentrated beam, based upon all available data, is : For the 60-inch, 6,000 to 8,000 yards; for the 36-inch, 4,000 to 6,000 yards."

In the opinion of the Board the best illumination is obtained when the angle at the target between the observer and the light is made as great as possible, even up to 60° as some authorities claim. The Board says :—"It is generally conceded that a high position is the best for a searching light, but another important condition is that the light should be near the shore line. These conditions are often irreconcilable and one or the other must, as a rule, be sacrificed. The shore position is in any case considered of primary importance. The material disadvantages of placing a light back from the shore are that it illuminates the foreground and the shore line, and not only interferes with observations by reflection of the rays, but serves as a useful guide to navigation by the enemy. Nevertheless where the lights can be placed high without illuminating the foreshore, it should be done, and by this means the disused light from the horizontal beam over the water surface illuminates the water area below."

The Board believes that in the case of an extended front, searching lights may be advantageously supplemented by lights installed on picket boats thrown well out to the front in observation. For this purpose, boats used during the day for other service may be employed. The search-light being of no value in a fog or heavy, misty weather, should not be used under such conditions. Where the several forts of a defence are near each other it will often be advantageous for the lights at one to illuminate the targets for the others. For this purpose the control must be as reliable as possible, and the cables should be laid connecting the various parts of a defence, and if possible be in duplicate, separately laid.

Launch of the First-class Armoured Cruiser "Maryland."—In the presence of some 15,000 persons, the armoured cruiser "Maryland," built by the Newport News Shipbuilding and Dry Dock Company, Newport News, Va., was christened by Miss Jennie S. Waters, on 12th September. The vessel started down the ways towards the water, and then came to a sudden stop, hanging on to the ways, partly in and partly out of the water, not having slid far enough to reach water deep enough to float her.

One cause of the unfortunate incident was the melting of the tallow owing to the hot weather. It ran out from between the ways and stopped the downward flight of the ship. The steel frames and plates which are in the hull of the "Maryland" weigh 7,000 tons, forming the heaviest hull that has ever been built at the shipyard. In addition to the unusual weight, the ship carried that of 16 boilers, which are generally placed in a ship when she is afloat. The pressure on the ways was two and a half tons to the foot and the ship's incline five-eighths of an inch to the foot.

The ship's stern was afloat, but the bow was out of water from the point where its bow begins to curve upward from the keel. Several tugs tried to float the ship, but without avail. Later the mud was dredged around the ways, and the vessel was successfully floated on 15th September without damage.

The "Maryland" is one of six armoured cruisers, with a length of 502 feet, now building, to cost 4,250,000 dollars each. The others are the "West Virginia," "South Dakota," "Pennsylvania," "California," and "Colorado."

Following is a brief description of the ship:—Length of hull, 502 feet; width of hull, 69 feet 6.5 inches; draught (normal), 24 feet 1 inch; displacement, 15,104 tons; H.P., 23,000; speed, 22 knots; coal-bunkers' capacity; 1,850 tons; complement of officers, 47; complement of seamen and marines, 783; number of guns, 66; number of shells, 16,200; torpedo-tubes, 2.

The ship will be propelled by two sets of twin screws vertical inverted triple-expansion direct-acting engines, designed for 23,000 collective H.P., having a stroke of 4 feet and running at 120 revolutions a minute. Each engine will be placed in a separate water-tight compartment, and will have cylinders 38.5 inches, 63.5 inches, and two 74 inches diameter. Steam at 250 lbs. pressure per square inch will be supplied from 16 water-tube boilers of the Babcock and Wilcox marine type. The boilers will be arranged in 6 water-tight compartments, the total grate surface being 1,600 square feet, and the total heating surface being 70,944 square feet. The funnels will be four in number.

The main battery will consist of four 8-inch breech-loading rifles and fourteen 6-inch rapid-fire rifles. The 8-inch guns will be mounted in pairs in two electrically controlled elliptical balanced turrets of the Hichborn type, placed on the middle line of the ship, one forward and the other aft, each having an arc of train of at least 270°. On the upper deck at the corners of the superstructure there will be four 6-inch guns, mounted in sponsons, one in each corner, and each having either a bow or stern fire, with an arc train of at least 145°. There will be, in addition, the gun-deck battery of ten 6-inch rifles forming a broadside, five on each side, the arc of fire of each being not less than 110°, or at least 55° forward and 55° abaft the beam, excepting in the case of the forward pair, which are so arranged as to be capable of direct ahead fire.

There will be a formidable secondary battery consisting of eighteen 3-inch breech-loading rifles, twelve 3-pounders, besides four 1-pounder automatic guns, four 1-pounder rapid-fire guns, six Colt automatic guns, two machine guns, and two 3-inch field pieces. The 1-pounders will be placed in the fighting tops.

The armoured protection will consist of a water-line belt extending 5 feet below and 4 feet above the normal load line, and from stem to stern. The maximum thickness will be preserved at 6 inches for a depth

of 6 feet from the top. The armour will taper at the stem and stern to a thickness of 3.5 inches. The armour on the turrets, with inclined port plates, will be 6.5 inches thick on the port plate, and 6 inches thick on the sides and rear. At the ends of the armour there will be armoured bulkheads 4 inches in thickness, so forming an inclosed citadel or casemate within which the ten 6-inch guns of the broadside battery are mounted.

The four 6-inch guns on the upper deck, at the corners of the superstructure, will be protected by 5-inch armoured casemates. The barbettes of the 8-inch gun turrets will have a uniform thickness of 6 inches, and the ammunition tubes, extending from the turret to the protected deck, will have a uniform thickness of 3 inches.

The conning tower will be 9 inches in thickness, with a 2-inch steel top, and from its base to the protective deck will be an armoured tube 5 inches in thickness, and of sufficient diameter not only to permit of the accommodation of speaking tubes, etc., but also access to the conning tower from below the protective deck. The signal tower aft will be 5 inches in thickness. A complete oil tempered and annealed nickel steel protective deck, 1.5 inches thick on the flat and 4 inches thick on the sloping sides, is to extend the entire length of the vessel, and a cellulose cofferdam belt 3 inches thick, as an additional protection against water-line damage which might affect the stability, will be worked along both sides above the protective deck for the entire length of the vessel.—*U.S. Army and Navy Journal and Scientific American.*

MILITARY NOTES.

PRINCIPAL APPOINTMENTS AND PROMOTIONS FOR NOVEMBER, 1903.

Colonel J. C. Oughterson, from Director of Supplies, to be Director of Supplies and Transport, 1st Army Corps. Lieut.-Colonel and Brevet Colonel H. M. Lawson, R.E., A.D.C., to be Chief Staff Officer, South Africa, with the local rank of Brigadier-General whilst so employed. Major-General Sir R. Pole-Carew, K.C.B., C.V.O., to be a Major-General on the Staff to command the 8th Division, IIIrd Army Corps. Lieut.-Colonel H. R. B. Donne, an A.A.G. in India, is granted the substantive rank of Colonel in the Army. Lieut.-Colonel A. J. Murray, D.S.O., A.A.G., 1st Division, 1st Army Corps, is granted the substantive rank of Colonel in the Army. Colonel T. P. B. Ternan, C.M.G., D.S.O., from h.p., to be A.A.G., South Africa. Lieut.-Colonel and Brevet Colonel J. Reeves, C.B., from h.p., to be Colonel to command the 17th Regimental District (the Leicestershire Regiment). Colonel W. L. Gubbins, M.D., M.V.O., R.A.M.C., to be Surgeon-General. Field-Marshal H.R.H. the Duke of Connaught and Strathearn, K.G., K.T., K.P., G.C.B., G.C.S.I., G.C.M.G., G.C.I.E., G.C.V.O., Colonel Scots Guards and Army Service Corps, Colonel-in-Chief 6th Dragoons, the Highland Light Infantry, and the Rifle Brigade (the Prince Consort's Own), Personal A.D.C. to the King, to be Colonel-in-Chief of the Royal Dublin Fusiliers. His Majesty Christian IX., King of Denmark, K.G., G.C.B., to be a General in the Army, on the occasion of the 40th

anniversary of his Majesty's accession to the Throne. The commission to be dated 15th November, 1903. Lieut.-Colonel and Brevet Colonel A. D. Bulpett, from h.p., to be Colonel, to command the 45th Regimental District, the Sherwood Foresters (Nottinghamshire and Derbyshire Regiments). Major-General Sir H. M. L. Rundle, K.C.B., K.C.M.G., D.S.O., from commanding the 5th Division, IInd Army Corps, to be Major-General on the Staff to command the North-Eastern District. Major-General H. F. Grant, C.B., to be a Major-General on the Staff, to command the 5th Division, IInd Army Corps. Colonel (temporary Brigadier-General) E. S. Browne, V.C., from temporary command of North-Eastern District, to be a Brigadier-General on the Staff, to command the 11th Brigade, IInd Army Corps, and to retain the temporary rank of Brigadier-General whilst so employed. Lieut.-Colonel and Brevet Colonel J. Spens, C.B., A.D.C., from h.p., to command a Second-class District in India, and is granted the substantive rank of Colonel in the Army, with the temporary rank of Brigadier-General whilst so employed. Colonel C. W. Park, A.D.C., from h.p., to be D.A.G., Head-Quarters in India. Lieut.-Colonel and Brevet Colonel W. H. Stuart, from h.p., to be Colonel on the Staff for Royal Artillery, IIIrd Army Corps, and is granted the substantive rank of Colonel in the Army. Lieut.-Colonel and Brevet Colonel J. F. Blackburn, from h.p., to be a Colonel on the Staff, for Royal Engineers, and is granted the substantive rank of Colonel in the Army. The Rev. J. M. Simms, Chaplain to the Forces, 2nd Class, to be Chaplain to the Forces, 1st Class. Lieut.-Colonel the Hon. J. E. Lindley, from Commandant School of Instruction for Imperial Yeomanry, to be A.A.G., North-Eastern District, and is granted the substantive rank of Colonel in the Army.

AUSTRIA-HUNGARY.—*The New Infantry Drill Regulations for 1903.*—These new regulations have been approved by the Emperor, and came into force on the 1st October last. The provisional regulation published in 1901 has been abolished. The principal changes introduced by this new regulation deal chiefly with close formations, with the length of the gymnastic step, and with the changes of battalion formations from column or line.

When the battalion is in action, the distance at which the battalion reserve should follow the fighting line (formerly 400 paces) is not now actually laid down in figures. One no longer sees in these regulations the precept laid down in the provisional ones, that the commander of the battalion on taking up the attack formation should expressly mention the number of section to be immediately sent to the firing-line. A new heading, "Method of infantry action," has replaced the heading "Combat," hitherto in use. The limit of the distance at which troops may remain in close formations (formerly from 5,000 to 4,000 paces) is no longer expressed in figures. It merely states that they may remain in these formations as long as they have not entered the zone of the enemy's artillery action. The regulations for opening fire are enlarged. It now lays down that the advance should be pursued without interruption, as long as possible, until the opening of a general fire appears necessary. It was formerly laid down that "The advance should be continued uninterruptedly up to the distance for effective rifle fire, and then, according to circumstances, until the effects of the enemy's fire forces the troops opposed to it to open fire." It also lays down the precept that at drills in peace time, "All precipitancy in the attack should be forbidden, and it should be

remembered that time is necessary to obtain a superiority of fire." Finally, there is an important difference between the new regulation and the old provisional one as regards the employment of reserves under the personal responsibility of the commander. A change has also been made in the supply of ammunition.—*Précis from Danzer's Armee Zeitung.*

FRANCE.—*The War Budget.—Report of M. Maujan.*—The Budget scheme for 1904, as presented by the Government, is as follows :—

1st Section—Home Troops	622,480,964 francs.
2nd Section—Colonial Troops	28,196,036 „
3rd Section—Extraordinary Expenditure	30,043,000 „
Total	680,720,000 francs

A corrected demand in excess has been presented by the Government, amounting to 426,160 francs; but, on the other hand, the Budget Commission has effected a decrease of 3,010,049 francs with regard to the 1st and 3rd sections, so that the proposed credits now stand as follows :—

1st Section—Home Troops	620,057,357 francs
2nd Section—Colonial Troops	28,335,754 „
3rd Section—Extraordinary Expenditure	29,743,000 „
Total	678,136,111 francs.

The credits voted for 1903 amounted to 687,803,242 francs, thus those voted for the present are less by 9,667,131 francs than those of the previous year.

CHANGES ASKED FOR BY THE GOVERNMENT.

As stated above, the Government demanded an increased credit of 426,160 francs. The increase is required for :—

1. The reinforcement in horses (44) for an artillery regiment insufficiently provided with them.
2. An increase in the pay of the cadres of the disciplinary sections of the African battalions, foreign regiments, and Algerian tirailleurs, so as to place them all on the same footing as the Fusilier disciplinary companies.
3. The formation of native non-commissioned officers in the special branches of the service in Algeria.
4. The formation of three new provisional departments.
5. Ration allowances to re-engaged non-commissioned officers of Colonial troops, and extra pay to re-engaged corporals and men on furlough, as has already been granted in the case of home troops.
6. Increase of the credits already provided in the Budget for the rebuilding of the hospital at Nancy.

EFFECTIVES.—REGULAR ARMY.

Officers.—The reporter recalls to mind the observations made last year on the subject of the necessity for a prompt revision of the cadre regulation. The Government asked for the maintenance of 29,000 officers, instead of 28,924 as in 1903. The Commission accepted all the demands for an increase with the exception of ten captains of Engineers.

Rank and File.—The provisions are established on an effective of 544,845 men, a decrease of 6,222 men on the 1903 Budget. The chief cause of this decrease is the reduction of about 6,000 men in the yield of the contingents to be enrolled in 1904.

Horses.—The effective for 1904 is much the same as that of the preceding year.

Reservists.—The classes called out in 1904 have a rather weaker effective than those called out in 1903. The credits, too, demanded by the Government are smaller; the Reporter proposes no change whatever.

COLONIAL TROOPS.

The Reporter prefaces the examination of the Budget for the Colonial troops by some remarks on the garrisons most suitable for sending Colonial soldiers to on their return home. He demonstrates that it is illogical to send these troops on their return from the Colonies to cold, damp places, such as Brest and Cherbourg. On the other hand, since the regulation has decided that young men of the Colonial troops drawn from the contingent should not leave the mother country, it is illegal to have all the South Algerian stations, so deadly to all young people, garrisoned by men of the home contingent. The Reporter is, consequently, of opinion that Brest and Cherbourg should be garrisoned by home troops, and be replaced in Algeria and Tunis by Colonial soldiers. In conclusion, M. Maujan shows that the transfer of the Colonial troops from the Ministry of Marine to the War Department has only entailed an expenditure of 335,000 francs. It should be remarked that the Colonial troops enrol 3,000 men of the contingent annually.

The effectives are as follows:—

Men	...	...	...	...	27,572
Horses	...	...	...	...	1,650

—*Précis from Budget Général de l'Exercice, 1904, and Revue du Cercle Militaire.*

Recruiting Statistics for 1902.—The number of young men of the 1901 class, borne on the recruiting lists in January, 1902, amounted to 325,013, an increase of 15,681 on the number of those on lists of the preceding class. By adding those put back in 1900 (44,437) and in 1899 (23,397), the entire recruiting resources reached the total of 392,845 men, who were distributed as follows:—

Exempt as unfit for service, deceased, etc.	...	...	25,854
Debarred from service (criminals, convicts, etc.)	...	...	92
Put back	...	...	63,794
Residing abroad (out of Europe)	...	...	695
Naturalised, but exempt on account of age	...	...	1,252
Enrolled in the non-combatant branches	...	...	27,971
Serving as Volunteers	<div style="display: flex; align-items: center;"> <div style="font-size: 2em; margin-right: 5px;">{</div> <div style="display: inline-block; vertical-align: middle;"> in the Army (a) 26,109 in the Navy (b) 5,384 </div> </div>		
Enrolled for 1, 2, or 3 years	...	...	241,694
Total	...	...	392,845

3,000 men of the contingent enrolled for 1, 2, or 3 years were posted to the Colonial troops, thus reducing the Home contingent to 238,694 men. During the course of the year the young men who enlisted before reaching the age for military service amounted to 19,839 in the Home, and to 4,673 in the Colonial Army. By adding these numbers to those mentioned above under the figures (a) and (b), the total amounts to 292,315 men, of whom 284,642 are enrolled in the Home Army. To be absolutely exact, 8,474 men who failed to appear should be deducted from these numbers,

as these men, although enrolled as if actually present, for the most part never join the colours.

The 241,694 men called up, and the 24,512 who enlisted before the age for military service, have been posted in the following proportions amongst the various arms and departments :—

Home Army.

	Called out for 1 year.	Called out for 2 and 3 years.	Enlisting for 3, 4 and 5 years.
Infantry	65,075	106,934	12,444
Cavalry	113	22,145	2,849
Artillery	9,900	20,794	3,833
Engineers	1,620	4,490	713
Transport	1,115	2,080	—
Administration troops, etc. ..	1,720	2,708	—
Totals	79,543	159,151	19,839

Colonial Troops.

Infantry	680	1,652	3,549
Artillery	63	605	1,124
Totals	743	2,257	4,673

The contingent of those posted to the Home Army shows an increase of 24,596 men on that of the 1900 Class, viz. : 238,694–214,098=24,596. Under the heading of instruction the 325,013 recruits on the rolls are distributed as follows :—

13,696 can neither read nor write.

3,910 can only read.

33,075 can both read and write.

249,969 have a more developed primary education.

5,264 have certificates of primary education.

6,770 have taken degrees.

12,329 whose state of education is not known.

The calling to the colours of men of the 1901 Class took place on the 14th, 15th, and 16th November, 1902.—*Bulletin de la Presse et de la Bibliographie Militaires.*

Reorganisation of Colonial Troops.—It is three years now since the Marines were taken from the Naval Department in order to form a Colonial Army under the War Department. At that period of transition it was not definitely given out what forces were actually necessary for Colonial defence. Since that date, however, after exhaustive study by the Colonial Minister, a general plan for the defence of French Colonies has been arrived at, and it is now possible to place the new organisation of the Colonial troops on a rational basis. Since then, too, many orders have been promulgated with regard to the various French and native corps. The following of these may be specially noted, viz. : the formation, in France, of a Colonial army corps; the formation of a Cambodian rifle corps, and of a Chinese rifle battalion; that of a battalion of Colonial infantry at Guadaloup; the re-organisation of the Colonial troops quartered in Madagascar and Réunion; the suppression of colonial disciplinary companies; the organisation of the French Congo troops; the re-organisation

of the disciplinary corps of the Colonial troops; and the formation of two mixed Colonial field batteries.

The President of the Republic signed, on the 19th September last, two decrees prepared by the War Minister, and countersigned by the Colonial Minister, their object being to remodel the various arrangements and to re-organise the Colonial troops on the basis of the actual needs of the Colonies. The first of the two decrees deals with the Colonial infantry and the second with the Colonial artillery.

COLONIAL INFANTRY.

"The new arrangements," says the Ministerial report, "may be summed up as a repartition of the Colonial, French, and native infantry, into a method better apportioned to the importance of the defence of these Colonies, and by a decrease of the French and a corresponding increase of the native element amongst those troops. This re-organisation, combined with the methodical employment of the ever-increasing resources supplied by the French and native reserves in our Colonies, will result in a very appreciable increase in the Colonial defence force."

In France.—Nothing is changed with regard to the composition of Colonial infantry troops quartered at home.

In the Colonies.—The following is the organisation in the Colonies:—

FRENCH CORPS.

Indo-China.—The 9th, 10th, and 11th Colonial Infantry Regiments, of 3 battalions of 4 companies each, and the 12th Regiment of 2 battalions with 4 companies. Each regiment may, in addition, eventually have a dépôt company.

East Africa.—The 13th Regiment of 3 battalions of 4 companies, 1 battalion of 2 companies, at Réunion.

West Africa.—One battalion of 4 companies.

Antilles and Guiana.—One battalion of 5 companies.

Pacific.—One battalion of 3 companies.

NATIVE CORPS.

Indo-China.—Four Tonkinese rifle regiments, of which three (1st, 3rd, and 4th) have 4 battalions, and one (2nd) has 5 battalions of 4 companies; the 1st and 2nd Annamite Rifle Regiments of 3 battalions of 4 companies; a Chinese rifle battalion of 2 companies; and a Cambodian rifle battalion of 2 companies.

East Africa.—3rd Senegalese Tirailleur Regiment of 4 battalions of 4 companies; a Senegalese tirailleur battalion of 4 companies at Diego-Suarez; 3 Malagassy tirailleur regiments of 3 battalions of 4 companies.

West Africa.—1st and 2nd Senegalese Tirailleur Regiments of 4 battalions of 4 companies; 4th Senegalese Tirailleur Regiment of 2 battalions of 4 companies; a Senegalese tirailleur battalion of Zinder; a native infantry regiment of 2 battalions, at the Congo and Chad.

Other native battalions may be raised, forming corps recruited in the frontier districts, in Indo-China, according to the resources of the population; but their formation would be met by the suppression of the same number of Tonkinese tirailleur battalions.

DISCIPLINARY CORPS.

The Colonial Disciplinary Corps consist: 1st, in France, of a staff and a dépôt; 2nd, in the Colonies, of a Senegalese company, of a platoon

in Indo-China, and of a section in Madagascar. In each colony the commander of the troops may organise a disciplinary section for natives in one or more of the native regiments. The effectives of these sections (cadres and men) will be drawn from the whole of the native corps, which should send their refractory men to them.

COLONIAL ARTILLERY.

The changes introduced regarding the organisation of this arms "refers in no way," says the Ministerial report, "to the *personnel* of the Colonial artillery placed at the disposal of the Naval Department; they refer chiefly to the following points: the new distribution of units of Colonial artillery between the various Colonies; the reinforcement, in the Colonies, of the artillery administrative departments, which have to deal with increasing necessities, and more especially with the maintenance of a more and more considerable armament; the formation of a complementary cadre for improving the relief conditions, and the general service of that branch of the Service in France."

In France.—The regiments no longer, all three, consist of 12 batteries, and have no longer each the same composition in field, mountain, and foot batteries. It is merely laid down that the Colonial artillery at home consists of three Colonial artillery regiments, each having a varying number of batteries, and consisting altogether of 36 batteries, viz.: 12 field, 6 mountain, and 18 foot artillery batteries. They further include five companies of Colonial artillery workmen, and one company of Colonial artillery artificers.

IN THE COLONIES.

Indo-China.—Two regiments of Colonial artillery: the 1st at Tonkin, composed of 8 mixed batteries (2 field, 4 mountain, and 2 foot); the 2nd, in Cochinchina, composed of 10 mixed batteries (2 field, 3 mountain, and 5 foot); two mixed companies of Colonial artillery workmen, one at Tonkin and the other in Cochinchina.

West Africa.—One regiment of Colonial artillery, consisting of 6 mixed batteries (3 mountain and 3 foot); one mixed mountain section, in the Chad district, and one company of native drivers; two mixed companies of Colonial artillery workmen.

East Africa.—One Colonial artillery regiment, consisting of 8 mixed batteries (1 field, 8 mountain, and 4 foot); two mixed companies of Colonial artillery workmen.

Antilles.—One Colonial artillery brigade division, consisting of 3 foot batteries.

Pacific.—One Colonial foot artillery battery; a detachment of Colonial artillery workmen. The tables attached to the two decrees fix the effectives of the various corps.

NATIVE RESERVES.

As Article 18 of the Law of the 7th July, 1900, provided for the organisation of Colonial native reserves, the President of the Republic has just promulgated a decree making the military organisation of Madagascar and its dependencies conform to the above-named Article. According to the terms of this decree, Malagassies, who are freed before accomplishing at least one year of military service, and who reside in Madagascar or its dependencies, remain at the disposal of the military authorities, as reservists, for four years from the date of their having been sent home. During

these four years they are liable to be called to the Colours by order of the Governor-General:—

1. In case of mobilisation.
2. For periods of drill.
3. To answer their names.

During their stay with the Colours, the native reservists are under military law, and are tried by military courts-martial.—*Revue du Cercle Militaire*.

GERMANY.—*New Infantry Tactics*. One of the last numbers of the *Kölnische Zeitung* devotes an article to the new infantry tactics, and it may be of interest to give an analysis of it.

During the last Grand Manœuvres the German infantry put into practice a new method of attack, wrongly called the Boer attack (*Buren-Angriff*), as that method was never practised by the Boers, except, perhaps, occasionally during the latter part of the campaign. The conditions of European wars, even when seen through the prism of the South African fights, do not justify opinions regarding a change in the character of the war of masses. The influence of infantry and artillery fire during infantry action is only felt during the phase of immediate contact, when it should strive to keep down its losses. That, at least, is the prevailing opinion in Germany.

In France a great deal is talked about the tactical consequences of the Transvaal War. The supposed preponderance of modern fire has brought about the formation of a school, of which General Negrier is the chief. General Negrier was in consequence ordered by the French military authorities to apply his ideas to the last Grand Manœuvres of the XIIth and XIIIth Army Corps. General Langlois, on the other hand, has strenuously resisted the novelties of the "modern style," and has explained his ideas in two well-known pamphlets.

Most authors who have studied the Anglo-Boer War have come to the conclusion that it is sufficient, in order to guard against the effects of modern fire, to introduce some changes into the present tactical formations; and the new regulations take this opinion into account. The new school, however, consider these changes insufficient, and desire a complete tactical reform. They are of opinion that the defensive has acquired such an immense superiority over the offensive that it is criminal to stop short at these modifications. The results of modern fire are, they say, so crushing that the only movements possible on the battle-field are those only that are essential for the purpose of placing the troops in such a position as to obtain the best field of fire, or where they can best escape the fire of the enemy. Cavalry attacks have, they maintain, become impossible, and cavalry should merely be mounted infantry if they are to be of any use. On account of the present conditions of the battle, the Commander-in-Chief can no longer direct it, and can only intervene by his personal entry into action; the decision will more or less rest on spontaneous individual efforts, and the battle between the soldiers themselves will take the place of that between generals.

In Germany they are sceptical with regard to the "New School," and hold to old tactical principles without, at the same time, denying that there is room for the adoption of some modifications in formations. These changes do not rest on the combined action of the three arms, but only affect infantry when closing with the enemy. This action excludes all

regularly laid down formations, and infantry should take advantage of every fold of the ground from the commencement of the engagement up to the pursuit. Where there is no cover they should move in small groups, separated by intervals of from 5 to 10 paces. The small groups advance in short rushes of from 30 to 40 paces, so as to only be visible for a few seconds, and offering but a small target, the groups not all advancing simultaneously. The front of a company on a war footing thus deployed in small groups is from 100 to 150 yards. These small units will thus advance successively by short rushes either to as close to the enemy as the fire will allow, or until they reach some sort of cover. If there is no cover, they would advance up to 700 yards of the enemy. At these medium ranges they are reinforced by the supports, who are continually coming up from the rear, and they then open fire; that is where the real attack commences; this too is in a similar manner carried out by small rushes until the assaulting firing line has obtained a superiority of fire and dashes to the assault. The attack delivered by the skirmishers is supported by the reserves who follow in close formation at from 300 to 400 yards in rear:—

The training of the German infantry is conducted on these lines: Each squad is trained to move with the rapidity of lightning when in the firing line. Every man is accustomed to judge distance quickly, and to utilise the ground; initiative, under the conditions in which he must act, is developed in him, because the influence of his commanders on the firing line will of necessity be very limited. Great stress is laid upon the movements of the squad, the half-section and the section with regard to the keeping of the front assigned them, and the given direction. As the fire from the small groups will not be sufficient, it will not be opened except from favourable positions. During the halts of the firing-line every possible advantage must be taken of cover. The movement of a well-directed squad should conform to the position of the enemy and to the nature of the ground; sometimes it will advance at a walk and sometimes by rushes. It will sometimes close in and sometimes open out; but it will never lose sight of the enemy for a single second. Each section commander should control the distribution of his men into groups from time to time; several groups should not take up a position at the same time on a front of 200 yards swept by the enemy's fire. Each group advances without shouting and without any special signal, and is supported by the fire of the neighbouring groups, who are temporarily halting. Should there be no position in advance for a group, it should seek shelter in the line with the others, which it must not pass, and then continue its movements after the squad with which it became mixed up. Complete silence should be observed. Above all, the point of attack should be well selected, and the movements of the neighbouring groups constantly watched.

Supports and reserves should not expose themselves to the enemy in close formations at distances less than 1,200 on 1,400 yards, with the exception, of course, of the second period—that of the assault. At close ranges the supports and reserves must move in small groups like the skirmishers, their point of direction being clearly pointed out to them. All commanders must confine themselves to the limits of their duties, even to being prepared for the unexpected, must be able to pick out their exact positions according to the map and on the ground at the end of the affair, and be thoroughly aware of the duty devolving on them. Each of them should have someone selected to take his place. Connection with the fighting line is kept up by means of men at no greater distance from it than

the voice will carry. Each skirmisher should pay attention to what is passing round him. The front of a battalion in action is 400 yards, and its movements are similar to those of a company.

During the last German Grand Manœuvres the infantry operated according to these principles, which are opposed to the tactics of the "New Style."—*La France Militaire*.

ITALY.—*Changes in the Recruiting Districts.*—Amongst the changes to be laid before the legislature, that with regard to the transformation of the recruiting districts merits great attention. These districts are at present autonomous, and the intention of the War Minister is to deprive them of this autonomy and to transform them into sections under the regimental dépôts. In order to thoroughly understand the significance of the proposed change, it must be remembered that the object of the military districts, organised as they are at the present time, is:—1st, to carry out all operations regarding the annual calling out of the class; 2nd, to ensure mobilisation of the Territorial Militia. The formation of the Mobile Militia units and their mobilisation are the functions of the regimental dépôts.

The War Minister has considered that with the expenditure of but little labour it was not necessary to maintain any longer a completely autonomous organisation. He is of opinion that the rôle hitherto played by the military districts might, without inconvenience, be relegated to the dépôts, in each of which a recruiting section would be formed corresponding, from a territorial point of view, to the present districts. This change, with the state of things now in force, would cause neither trouble nor delay in the mobilisation of the Territorial Militia, because it would be carried out when that of the mobile Militia was over. If the nature and the mobilisation of the two Militias were similar and simultaneous, the regimental dépôts would have such an increase of work as would seriously hamper the rapidity of its operations. But as the two mobilisations are carried out successively this inconvenience will be avoided, and nothing will interfere with it, especially as the three echelons of national defence will be furnished by the regimental dépôt. The abolition of an intermediary organisation, such as the military districts, which are not absolutely indispensable, will cause a simplification in both the administration and the command and will, in addition, realise a saving of more than 500,000 lire a year.

The military districts with this present organisation consist of 551 officers of various ranks, 420 civilian employés, and 261 non-commissioned officers. This means a *personnel* of 1,232 individuals at an annual cost of 3½ million lire. The formation of recruiting sections equal in number to that of the districts will permit the abolition of a large portion of this *personnel*. The abolition of the military districts cannot, of course, be carried out without interfering with some individual interests. To these districts are attached officers of the combatant branches of the Service, who, on account of their age and the state of their health, are no longer available for active service. A portion of these officers might be employed in the proposed recruiting sections; but others will be obliged to retire prematurely. However that may be, public interest must always dominate private ones at whatever cost to the individuals concerned.

Exemption from Training of Soldiers who take part in National Target Practice.—The Minister of War has wished that the men should be thoroughly acquainted with the advantages they may obtain by regularly

taking part in target practice after they have been discharged. He has consequently ordered that each soldier's small book should contain a page pointing out how he can obtain the advantages in question. The title of this page is: "Notice on National Target Practice for Discharged Soldiers," and the following is, in brief, its contents:—

1. Soldiers belonging to the 1st Category may, before discharge, register their names at the Target Practice Society at their homes. Should there be none, they may register their names either at their own district society, or at the one of the nearest district. By thus acting they may become exempted from training periods.

2. Discharged soldiers of the 1st Category who have for two years gone through a course of musketry at one of the Target Practice Societies, and who have qualified as good shots each year, are exempt from one period of training. If they wish to be excused from a second period they must go through another two years' course and qualify as good shots.

3. In order to be declared *fit*, the man must carry out the eight regulation practices and obtain, at least, 46 points in the six last.

4. The practices may only be carried out at the rate, as a rule, of one a day.

5. The annual subscription is 3 lire, which must be paid before commencing to fire. Those men showing a certificate of want of means, signed by their municipal authorities, may be excused from payment of the subscription and for the cost of the cartridges.—*La France Militaire*.

JAPAN.—*The Budget for 1903.*—The *Rouskii Invalid* gives the following details of the Japanese Budget for 1903:—

The Government receipts are reckoned at 273,630,876 yens (a yen is about two shillings), and the credits allotted to the various departments are as follows:—

ORDINARY EXPENDITURE.

Civil List	...	...	...	...	...	3,000,000 yens
Foreign Affairs	...	...	...	...	...	2,282,785 "
Interior	...	...	...	...	...	10,583,416 "
Finance	...	...	...	...	...	61,763,678 "
War and Admiralty	...	...	...	...	...	59,781,374 "
Justice	...	...	...	...	...	10,837,708 "
Public Instruction	...	...	...	...	...	4,845,645 "
Agriculture and Commerce	...	...	...	...	...	2,948,912 "
Lines of Communication	...	...	...	...	...	21,172,976 "

Total 177,216,494 yens

EXTRAORDINARY EXPENDITURE.

Foreign Affairs	...	...	...	...	...	52,724 yens.
Interior	...	...	...	...	...	9,846,373 "
Finance	...	...	...	...	...	39,482,696 "
War and Admiralty	...	...	...	...	...	15,044,752 "
Justice	...	...	...	...	...	565,640 "
Public Instruction	...	...	...	...	...	2,045,156 "
Agriculture and Commerce	...	...	...	...	...	3,824,513 "
Lines of Communication	...	...	...	...	...	22,346,142 "

Total... .. 93,207,996 yens.

The grand total of the ordinary and extraordinary expenditure thus amounts to 270,424,490 yens. The total of the credits devoted to the War Department and the Admiralty (ordinary and extraordinary) being 74,826,126 yens, it results that Japan devotes 28 per cent. of her total credits to her military and naval matters. This is a relatively high percentage; it is 21 per cent. in Germany and 25 per cent. in Russia. It may not be uninteresting to show the items of the ordinary and extraordinary credits devoted to the Army:—

ORDINARY EXPENDITURE.

Central Administration	238,272 yens.
Maintenance of Troops	36,968,180 "
Gendarmerie	1,054,794 "
Colonial Troops	153,520 "
War Funds	7,550 "
Total... ..	38,432,186 yens.

EXTRAORDINARY EXPENDITURE.

Construction of Fortified Works	2,931,772 yens.
Equipment of Troops	2,471,688 "
Armament	1,644,538 "
Engineers	269,852 "
Provisional Army Corps in Corea	246,503 "
Pacification of Formosa	50,000 "
Military Legislation, Archives, etc.	310,123 "
Special Credit	73,687 "
Total... ..	7,998,163 yens.

The credits for the land forces alone thus amount to 46,430,349 yens.

UNITED STATES.—*New Cartridge Belt for U.S. Army.*—Last winter a board of officers was organised and assembled at Sandy Hook to experiment with the different carriers there presented. None of them were found to be entirely suitable, but experiments were continued, and finally The Anson Mills Woven Cartridge Belt Co., of Worcester, Mass., produced a suitable woven carrier and suspenders, which the Department adopted for future use, not only with the new Springfield rifle requiring clips, but also as a carrier for the single cartridges used by that portion of the army which may continue temporarily to use the Krag.

The new belt is $3\frac{1}{4}$ inches wide, and has nine pockets, each of the proper size for holding two clips, giving a capacity of 90 rounds in the entire belt. One pocket, however, will be used for carrying the first-aid package, thus reducing the number of cartridges carried to 80.

In the accompanying illustration the carrier is shown detached from the suspenders.

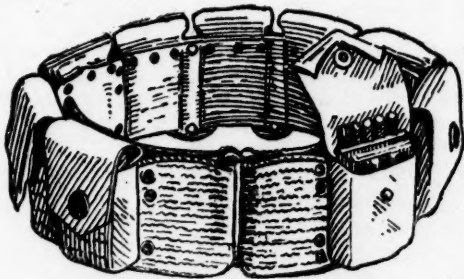
Both the carrier and the suspenders are formed wholly of woven fabric, the only sewing being on the points of the pocket flaps and at the ends of the belt, which are further finished with metal and pieces. On the suspenders there is no sewing whatever. The pockets are integral with the belts, and are formed by weaving only, the threads of which they are composed being continuously interwoven with the body of the belt. This enables the manufacturer to produce pockets absolutely uniform in size, not only on a single belt, but on all belts that may be woven, and which are separable from the belt only by destroying the fabric. Neither

of these features is obtainable on any belt formed by sewing one piece of material to another.

The fabric of both belt and suspenders is woven from a specially hard twisted cotton yarn of great durability, which is dyed in the same shade of khaki colour as the service uniform.

The flaps covering the pockets are of separate pieces of fabric eyeletted to the body of the belt. They are provided with a strong ball-and-socket glove fastener, by means of which the flap may be buttoned over the pocket, thus holding securely in place the clips or cartridges therein.

The ends of the belts are provided with fasteners which engage eyelets, set at intervals in the body of the fabric, to enable the soldier to accommodate the length of the belt to his girth. Near the lower edge of the belt are fixed a series of eyelets from which the canteen and haversack may be suspended; and near the upper edge are eyelets through which pass the hooks of the suspenders.



THE NEW CLIP BELT.

The suspenders are of the same kind of woven fabric as the belt itself. The web resting on the shoulder is 2½ inches wide; the supporters attached to this, which are of fabric 1 inch wide, end in hooks which engage the eyelets in the belt. Three adjustments are provided: two in front and one in the back, thus enabling the tallest or the shortest soldier to bring the belt itself to the proper position about his waist. To prevent the suspenders slipping off the shoulders, one of the branches of each of the two front lugs may be hooked in an eyelet on the further side of the belt, and the belt may then be worn unbuckled to afford ease in strenuous marching.

All the metal parts are made of brass, and are bronzed to the same shade as the buttons on the Service uniform. The buttons on the pockets are embossed with the regulation device of the eagle. The carrier is shown in the illustration with the regulation hook fastener of the present service belt, but, before being issued to the army, each belt will be equipped with a new form of buckle which the Department will produce at Rock Island arsenal.

The total weight of the new carrier, exclusive of the buckle, is fifteen ounces, and that of the suspenders is eleven ounces.—*The Canadian Military Gazette.*

Report of Surgeon-General U.S.A.—In his annual report, Brigadier-General Robert M. O'Reilly, Surgeon-General U.S. Army, says with regard to the drink problem, it appears that the admissions to the sick report because of alcoholism in 1902 were slightly in excess of those in 1901. On this subject the Surgeon-General says:—"From the reports of the Surgeon-General for the past twenty years it is found that alcoholism is

not nearly so great an evil in the Army as it was prior to the establishment of the post exchange allowing the sale of beer and light wines to the soldier. From 1883 to 1888 the annual admission rate for alcoholism varied from 69 to 40 per thousand. When this last figure was reached the Surgeon-General reported, in 1889:—'There is here manifested a gratifying temperance movement which it is hoped the canteen system may render more actively progressive,' and in 1890, 'Prohibition on the military reservation has been suggested and tried, but this has immediately invited the establishment of dens of dissipation and disease just beyond the jurisdiction of the commanding officer. Licence on the reservation, in the opinion of our medical officers, is infinitely preferable to unbridled licence outside of it. It is believed that the canteen system will have a greater effect in reducing the statistics of alcoholism than any measure that has yet been tried.' This belief seems to be abundantly justified by the following table, showing a steady decrease of alcoholism, it being kept in mind that the sale of beer at post exchanges was abolished in February, 1901, since when the admissions for alcoholism have increased.

Admission rate for alcoholism per 1,000 of strength, Regular Army, 1889 to 1902, inclusive.

1889 rate...	41.43	1896 rate...	29.06
1890 " ...	40.73	1897 " ...	27.86
1891 " ...	40.01	1898 " ...	15.16
1892 " ...	37.23	1899 " ...	18.70
1893 " ...	33.97	1900 " ...	18.38
1894 " ...	30.94	1901 " ...	23.80
1895 " ...	30.11	1902 " ...	22.65

The disbursements of the Medical Department for the year under review amounted to 976,292.68 dollars. The total accounted for was 2,340,318.52 dollars, including balances of 1,130,583.88 dollars on hand 30th June, 1903.

The admission rate per thousand of strength of the whole Army for disease and injury in 1902 was 1,716.51, a slight improvement on the rate of 1901, which was 1,791.59. Discharges for disability gave a rate of 23.3 in 1901. The deaths in 1902 were 1,549 per thousand, but only 1,394 in 1901. The increase is due to a loss of 35.4 per thousand by cholera. In the United States the admissions were 1,343.77 and deaths 7.83 per thousand, compared with 1,555.25 and 6.90 in 1901. In the Pacific islands 2,144.75 admissions and 24.31 deaths per thousand compare unfavourably with 1,928.14 and 17.96 in 1901, but cholera caused the death of 7.57 soldiers out of every thousand in the islands. In Cuba and Porto Rico the Army had much less sickness and death than in the United States or Pacific islands, the admission rate there of 1,300.24 and a death rate of only 6.72 show that our troops on these islands are as healthy as was the whole Army at home during the decade 1888-1897, prior to the Spanish war, when sickness and mortality were the lowest ever recorded.

One of the interesting facts noted by General O'Reilly is that the greatest non-effectiveness from disease and injury in the United States was reported in January, February, and March, in which months the sick report of troops at home was larger than in the Pacific islands. Referring to the cholera epidemic in the Philippines, which began in March last, and the consequent increase in the death rate, it is pointed out that the

recent great reduction in the number of military posts in the islands has resulted in the withdrawal of troops from many of the more inaccessible stations, and their re-distribution in such a way as to allow the best sanitary conditions to obtain. Under the insular government of the islands, noting the extraordinary improvement of health conditions in Manila, through the efforts of the insular board of health, the chief officer of which has always been a medical officer of the Army, it is stated that the city's health now compares favourably with some of the largest municipalities in the United States and Europe. The death rate in Manila for the current year is about one-half of what it was four years ago, amounting to only 22.17 per thousand for all classes.

Turning to conditions in the United States, General O'Reilly notes that, because of the increase in the Army, the barracks and quarters at some stations are reported as overcrowded, with resulting bad ventilation, or else they are in bad repair. The water supply of posts in the United States is generally satisfactory and beyond criticism, but at some of the larger stations water for drinking is boiled as a routine measure. The permanent military stations of the United States should have water supplies beyond suspicion, ample for all purposes, and preferably independent of neighbouring municipalities. Most men will drink from the most convenient source, and are apt to prefer the unboiled water. At Fort Leavenworth, Kan., the water supply from the town system of Leavenworth has been repeatedly condemned by medical officers, but the question seems to be now on the eve of satisfactory settlement. At Jefferson Barracks, Mo., an experimental well has been suggested, with a view to securing a water supply independent of St. Louis. At the Presidio of San Francisco, Cal., the local supply is insufficient, and the general hospital and neighbouring camps and cantonments use the city water.

It is recommended that the Philippine scouts be supplied with the full Army ration. As to the habits of the scouts he makes this striking utterance:—"The freedom of the Filipino from the vice of drunkenness is strikingly shown when we find that out of 5,000 men only three individuals were treated for alcoholism in one year, and that while white soldiers were admitted to sick report on account of their own misconduct in the use of alcohol at the rate of 24.78 per thousand, and coloured troops at the rate of 11.70, the Malay scouts showed the extremely small admission rate of 0.62 per thousand."

Of the 176 candidates examined only forty were found physically qualified. The vacancies in the grade of assistant surgeon are being slowly filled, but that there is a small but steady loss by resignation of some of the most highly-trained young medical officers because prospects in civil practice appear to them brighter and results less remote than in military life. General O'Reilly believes that the proportion of officers of different rank in the Medical Corps should be such that about twenty years' service as an assistant surgeon would be the maximum. The number of medical officers of superior rank should be about as follows:—Ten assistant surgeons-general, eighteen deputy surgeons-general, and seventy-five surgeons. Without increase in the total number of medical officers allowed by law, the above number in the superior grades would nearly restore the former proportion of two assistant surgeons to one surgeon or higher.

A high tribute is paid to the fifty volunteer surgeons who were taken into the Army under the Act of 2nd February, 1901, and it is noted with satisfaction that five of them since their honourable discharge have been recommended for commissions in the Regular Service. An interesting fact pointed out is that dental diseases are as prevalent among officers and

enlisted men of the Army as among individuals of relatively the same social classes in civil life, but that such diseases are much commoner among those who are serving, or have served, in the Philippines. Remarking that while the work required of Contract Dental Surgeons was formerly largely of an emergency nature, General O'Reilly says:—"Now, with the full complement of dental surgeons on duty, more time and attention are devoted to teaching methods of prophylaxis, to conserving the teeth by proper treatment of diseased conditions, restoring them to usefulness by inserting appropriate fillings, and replacing lost teeth by suitable crowns, bridges, or artificial dentures."—*U.S. Army and Navy Journal*.

NAVAL AND MILITARY CALENDAR.

NOVEMBER, 1903.

- 2nd (M.) Announced that the Garrison of Warmbad, in German South-West Africa, had been annihilated by Hottentots, and some English colonists made prisoners.
- 3rd (T.) H.M.S. "Centurion" commissioned at Portsmouth for service in China.
- " " H.M.S. "Arrogant" commissioned at Devonport for service in Mediterranean.
- 4th (W.) H.M. the King presented transport medals to 150 officers at Buckingham Palace.
- " " Panama revolted from Columbia.
- " " 1st Bn. North Staffordshire Regiment left India for England in the "Sicilia."
- 5th (Th.) H.M.S. "Donegal" commissioned at Devonport for service with Cruiser Squadron.
- " " Launch of third-class Cruiser "Amethyst," from the Elswick yard, Newcastle-on-Tyne.
- " " 4th, 5th, and 6th Companies R.G.A. left England for Gibraltar in the "Dilwara."
- 6th (F.) A Committee of three was appointed on War Office Reform.
- 7th (Sat.) Launch of new Admiralty Yacht "Enchantress" from Messrs. Harland and Wolff's yard at Belfast.
- 8th (S.) A raiding band of Bondelzwarts entered British territory near Viol's Drift in South Africa, but retired across the Orange River after a slight skirmish.
- 9th (M.) 4th, 5th, and 6th Companies R.G.A. arrived at Gibraltar from England in the "Dilwara."
- " " 99th and 100th Companies R.G.A. left Gibraltar for Malta in the "Dilwara."
- " " 2nd Bn. Royal Inniskilling Fusiliers arrived in Egypt from South Africa in the "Dunera."
- 10th (T.) A party of Hottentots crossed the Orange River at Ramend's Drift, but were driven back.
- " " 2nd Bn. Royal Dublin Fusiliers arrived in Ireland from Aden in the "Soudan."
- 11th (W.) H.M.S. "Bedford" commissioned at Devonport for service with Cruiser Squadron.
- " " Report of the German General Staff on the operations of the South African War, up to the Battle of Colenso, was issued.

- 11th (W.) 46th Company R.G.A. left Gibraltar for Sierra Leone in the "Batanga."
 12th (Th.) H.M.S. "Albemarle" commissioned at Chatham for service in the Mediterranean.
 " " 3rd Bn. Royal Fusiliers left Egypt for Bermuda in the "Dunera."
 13th (F.) 99th and 100th Companies R.G.A. arrived at Malta from Gibraltar in the "Dilwara."
 14th (Sat.) 1st (King's) Dragoon Guards arrived in England from South Africa in the "Tintagel Castle."
 15th (S.) Lord Kitchener met with an accident, when riding at Simla, India, breaking his leg.
 " " Galadi, Somaliland, was re-occupied by the British.
 16th (M.) Announced that a British expedition was to advance to Gyantse, in Thibet.
 " " 2nd Bn. Oxfordshire Light Infantry arrived in England from India in the "Plassy."
 17th (T.) 44th Company R.G.A. left Malta for England in the "Dilwara."
 18th (W.) 46th Company R.G.A. arrived at Sierra Leone from Gibraltar in the "Batanga."
 19th (Th.) 95th Company R.G.A. left Malta for Bermuda in the "Dunera."
 22nd (S.) General Manning, returning from Galadi to Bohotle, Somaliland, had a skirmish with a raiding body of the enemy and captured a large quantity of stock from them.
 24th (T.) H.M.S. "Highflyer" paid off at Devonport.
 " " 40th Company R.G.A. left Sierra Leone for England in the "Biafra."
 25th (W.) H.M.S. "Albemarle" left Portsmouth for Mediterranean.
 26th (Th.) 1st Bn. North Staffordshire Regiment arrived in England from India in the "Sicilia."
 27th (F.) 44th Company R.G.A. arrived in England from Malta in the "Dilwara."

FOREIGN PERIODICALS.

NAVAL.

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NOTICES OF BOOKS.

1800. *Marengo and Hohenlinden.* By Colonel GEORGE ARMAND FURSE, C.B., late of the Black Watch. London : William Clowes and Sons, 23, Cockspur Street, S.W. 1903.

We welcome this work as the first-fruits, in English, of the excellent seed sown by the Military History Section of the French General Staff, thanks to whose labours it is now possible to attempt a connected history of the Wars of the Revolution and Empire. Mainly, it is based on the work of Captain de Cugnac, "*L'Armée de la Reserve 1800*," a lengthy review of which we recently contributed to these pages, and we can sincerely congratulate Colonel Furse on the excellent use he has made of his materials. He has produced a consecutive, thoroughly readable account of the two campaigns under discussion, and besides clearing away many misapprehensions, has supplied students with admirable data with which to exercise and develop their own strategical abilities.

Quot homines tot sententiae, and it is always difficult to find two men who will agree as to the proper standpoint from which Napoleon's action is to be contemplated; but having only recently completed a fairly exhaustive study of de Cugnac's work, perhaps Colonel Furse will pardon a few remarks on his treatment of the subject matter.

The point seems to be : What is it in Napoleon's conduct that chiefly calls for admiration, and, if possible, imitation? Is it the conception of forcing the enemy to fight with his front facing his own base, and the skilful timing of marches and feinting by which the necessary degree of concentration to ensure success was obtained, or is it not the extraordinary driving energy and strength of resolution in the man, who, with an army incomparably inferior, to the outward eye, compared with its enemy, dared to accept the risk of utter annihilation his plan involved, and persisted in it, in spite of an accumulation of hindrances both physical and material which could not be foreseen or guarded against?

For we maintain that annihilation total and complete was the risk Napoleon accepted at Marengo; though he afterwards laboured to prove that he still had an alternative line of communications open to him over the St. Gotthard, this was only to justify his action in the eyes of contemporary strategical critics, who were endeavouring to measure him by the rules of a bygone condition of affairs, no longer applicable to the circumstances of this special period.

At the moment of his decision no one knew better than he what defeat for the French would have meant. He had had to deal with insurrections in rear of his victorious army only four years before, and the grass was hardly green over the graves of the thousands that had been massacred in the disastrous retreat of the preceding year across the plains. But now it was a case of crossing not only the plains but a long and difficult mountain pass beyond them, inhabited by men the reverse of friendly to the French cause, and running within easy striking distance of the Austrian frontier, which in those days included all the upper valley of the Rhine.

Defeat meant destruction, and that being the case our admiration is all for the character which accepted the risk rather than for the mechanical dexterity which contrived the plot, and hence, in selecting from de Cugnac's treasure-house, it is from the letters that reveal the apparently hopeless confusion which characterised the whole situation around Lake Lemman the week before Napoleon arrived, and the iron resolution and superhuman capacity for work which enabled him to have things "sufficiently" ready at the appointed hour for the execution of his most difficult task.

This is the great lesson of Napoleon's career for all Regular Armies. There was no lack of able strategists in the European armies of the day, but they were wanting in that energy which alone overcomes the internal resistances of great masses, and could not believe that men, shoeless and in rags, deficient in every apparent necessity of a soldier's efficiency, can still be made to conquer if the "great will" is behind them. Nor have things changed materially since those days, for both the American Civil War and the German victories of '66 and '70 conclusively show that "will power" is still the essential condition of success.

The Tactical Employment of Quick-Firing Field Artillery. From the French of Gabriel Roquerol, Major in the 16th Regiment of Artillery. By Captain P. de B. Radcliffe, R.F.A. London: Hugh Rees, Ltd., 124, Pall Mall, S.W. 1903.

This is a very admirable translation of an excellent book, one of the greatest importance at the present moment, to counteract the prevailing tendency to regard the experience of the recent Boer War as the last word in tactics.

To appreciate the difference of the conditions we may be called on to face, it is sufficient to note that, taking the total number of Boers in the firing line at Colenso at 4,000, an outside estimate, and their rate of aimed fire at five rounds a minute, then ten French guns can easily deliver as many bullets in a minute with greater accuracy and at a substantially greater range.

But, as between equally well-armed opponents, this does not imply that there will be any greater destruction of life, at any rate on the victorious side.

As Major Roquerol very clearly points out, it simply brings us back to the relative position of the two arms, infantry and artillery, which existed throughout the Napoleonic campaigns, with the sole difference that the massed case shot preparation of former days will be carried out at 3,000 yards instead of at 300.

The infantry will certainly have to cover a far deeper zone of ground under fire; but, on the other hand, the longer the distance to be covered the greater the prospect of finding cover.

The net gain, however, results to the attacking artillery, which, by reason of the increase of range, has a wider area for deployment, and can hence either sweep a given area with a more intense fire, or give an equally intense fire over the same area with fewer rounds, or over a greater area for equal number of rounds.

Had French batteries gone into action against the Boers, instead of attempting to attain the demoralisation of the Boers by long-continued slow-fire artillery preparation, they would have confined themselves to the keeping down of the enemy's heads, by bursts of rapid fire of such intensity that over the whole fire-swept area no head could have remained exposed long enough to take deliberate aim. In this way they would have obtained the advantage of surprise, and possibly equal results for a smaller expenditure of ammunition.

How all this works out we must leave the readers of the book to discover. We will only add that a more fascinating subject of study has rarely come into our hands.

History of the Volunteer Infantry. By ROBERT POTTER BERRY, late Lieutenant 6th W. York Rifle Volunteers. London: Simpkin, Marshall and Co. 1903.

There is no more appropriate time than the present for a study of the history and organisation of the Volunteer force. Mr. Berry's book consists of an account of the Huddersfield corps in which he once held a commission, prefaced by much interesting information concerning the various organisations associated with volunteering from the earliest periods. There was a Huddersfield Corps of Volunteers in 1798-1802; another was raised in 1803, and converted into Local Militia in 1808—a transformation which many experienced officers would like to see applied to the present Volunteer force; while a third Huddersfield corps, or armed association, was in existence in 1820 during that troublesome period. But the 6th West York Rifle Volunteers, as a history of which corps Mr. Berry's book was primarily written, was raised on the revival of the Volunteer movement in 1859; and he has treated its subsequent history, and the various regulations dealing with the organisation and efficiency of the Volunteer force generally, in a manner which attaches to his book an interest and importance far greater than would have been the case in an ordinary regimental history. His book is a history not only of the spirit of volunteering from the earliest times; but, better still, it shows how, until the introduction of a standing army, and even till as late as the early part of the last century, the manhood of this country readily accepted the obligation imposed by the State of taking some part in the defence of the country whose protection they enjoyed. It is the hope of many that the near future may witness a revival of this spirit, in lieu of the present feeling of leaving to the patriotic few the duty which every honourable man ought to undertake. Mr. Berry goes further, and believes that it is impossible for the Volunteers to become an efficient and reliable force on the purely voluntary principle.

Mr. Berry acknowledges ignorance of any early Saxon obligation of national defence. Surely he must have heard of our primitive national Militia, consisting of the mass of free landowners between the ages of sixteen and sixty, known as the Fyrd, a force which was reorganised by King Alfred or his son. It was with the raw levies of the Fyrd that King Harold made his gallant stand against the Norman army at Hastings, and in the ranks of the London Militia he fell.

In Mr. Berry's allusion to the earlier military organisation he refers to the Honourable Artillery Company of London, which Mr. Clode, in his *Military Forces of the Crown*, claims to be the oldest corps in the realm either of the Regular or Volunteer forces, a belief which for want of contradiction, still claims currency in the country.

The Honourable Artillery Company was formed by Royal Charter in 1537, and is no doubt an interesting Volunteer organisation. But in face of the formation of the Yeomen of the Guard in 1485, the known existence of Train-Bands, or Militia, in Kent in 1492, and the Militia called into existence throughout the kingdom by the Assize of Arms in 1181, the claim will not hold water.

Space will not admit of further reference to the book. It has been compiled with infinite pains by an enthusiast, is well printed and illustrated, and is well worth reading.

PRINCIPAL ADDITIONS TO LIBRARY DURING NOVEMBER, 1903.

Epitome of Alison's History of Europe. 8vo. (William Blackwood and Sons.) London, 1887.

Jena oder Sedan. By F. A. Beyerlein. 8vo. Berlin, 1903.

The Military Law Examiner. By Lieut.-Colonel S. C. PRATT. 5th Edition. Crown 8vo. 4s. 6d. (Presented.) (Gale and Polden.) Aldershot, 1903.

Manual of Military Engineering. (Provisional.) Demy 12mo. 1s. (Presented.) (Harrison and Sons.) London, 1903.

L'Armée Chinoise. By Général H. FREY. 8vo. 2s. 8d. (Librairie Hachette et Cie.) Paris, 1904.

Au Pays des Boers. By POULTNEY BIGELOW. 8vo. (Presented.) (F. Juven.) Paris, 1903.

A Voyage to Spitzbergen. By JOHN LAING. 2nd Edition. Crown 8vo. (Presented.) (Adam Black.) Edinburgh, 1818.

The Story of a Soldier's Life. By Field-Marshal Viscount WOLSELEY. 2 vols. 8vo. 32s. (Archibald Constable.) London, 1903.

Text-Book of Military Administration and Law (Provisional.) Royal Military College. 8vo. 3s. (Harrison and Sons.) London, 1903.

Records of the Woolwich District. By W. T. VINCENT. (Presented.) 8vo. 2 vols. (J. P. Jackson.) (J. S. Virtue and Co.) Woolwich and London, 1890.

The Principal Navigations, Voyages, Traffiques, and Discoveries of the English Nation. By RICHARD HAKLUYT. Extra Series. Vols. I., II. 8vo. (James MacLehose and Sons.) Glasgow, 1903.

